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THE DISASTROUS FAIRBANKS, ALASKA FLOOD OF AUGUST 1967

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REPORT

TO THE

OMMITTEE ON PUBLIC WORKS
UNITED STATES SENATE

BY

Senator ERNEST GRUENING

ON

A SPECIAL ON-SITE INVESTIGATION

MADE ON

AUGUST 24 AND 25, 1967

SEPTEMBER 1967

Printed for the use of the Committee on Public Works

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LETTER OF TRANSMITTAL

SEPTEMBER 12, 1967.

To the Committee on Public Works.

MY DEAR COLLEAGUES: The recent severe floods at Fairbanks, Alaska, prompted the Committee on Public Works to authorize a member of the committee to investigate the flood situation in that city, with instructions to report back to the committee with recommendations at an early date.

In accordance with the desire of the committee, I authorized the Honorable Ernest Gruening, a member of the committee and a Senator from the State of Alaska, to make the requested on-the-spot investigation.

The flood inspection desired by the committee was made by Senator Gruening on August 24 and 25. His findings and recommendations are contained in this report.

Truly,

JENNINGS RANDOLPH,
Chairman, Committee on Public Works.

LETTER OF SUBMITTAL

SEPTEMBER 12, 1967.

Hon. JENNINGS RANDOLPH,
Chairman, Committee on Public Works,
U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: As directed by the Committee on Public Works, I have made an on-the-site inspection of the flood situation at Fairbanks, Alaska. Details of this investigation together with other appropriate information made on August 24 and 25, 1967, are set forth in the attached report.

It was with heavy heart that I toured the flood ravaged areas of Fairbanks and Nenana. The destruction was beyond comprehension. Thousands were driven from their homes and businesses by the rampaging waters of the Tanana and Chena Rivers. The homeless were housed in many temporary quarters, several thousand residents found sanctuary at the University of Alaska which is located on an elevated area near Fairbanks.

I saw homes whose foundations had been undermined by the swift flowing waters making them unsafe for occupancy. Every basement was flooded. Many had water extending several feet above the first floor level. Furniture, household effects, and personal belongings have been damaged in most cases beyond repair. Seven persons are believed to have perished.

This tragedy must not happen again. We must do all we can to alleviate such a possibility. Therefore, I make the following recommendations to the Committee and to the Congress:

1. The immediate appropriation of $50,000 to enable the Corps of Engineers to complete its investigation of the Chena River flood control project;
2. Immediate consideration of the report of the Chief of Engineers on such investigation of the Chena River at such time as it is transmitted to the Congress;
3. The appropriation of funds for the construction of such flood control improvements for the protection of Fairbanks and Nenana as may eventually be approved by the Committee on Public Works and authorized by the Congress; and
4. The appropriation of necessary funds to the Environmental Science Services Administration (Weather Bureau), to provide for additional flood forecasting services in Alaska, particularly in the Tanana River Basin.

Mr. Chairman, I realize the recommendations I have made will take some years to reach fulfillment but we must begin now if we are to prevent a recurrence of the tragic events of August 1967 in the Chena River Valley. The magnitude of the disaster is reflected in many new statistics available since the flood. For example, the Corps of Engineers in all of its study of the Fairbanks area had no record of more than 36,000 cubic feet per second being recorded at the

Chena River checkpoint, yet during the flood 74,000 cubic feet per second were recorded.

The many Federal agencies engaged in the flood-fighting operations and in the cleanup and repair that followed are to be congratulated for the service they rendered during the past few weeks.

Col. Ernest L. Hardin, District Engineer, Corps of Engineers, Alaska District, only recently assumed command of the engineering activities of this area, but all will agree that he handled the situation well. He is an asset and a credit to the Corps of Engineers and the people of Fairbanks are thankful that he was assigned to that area.

Mr. Creath Tooley, the able director, regional office No. 8, Office of Emergency Planning, was on hand to direct the various flood emergency programs of that agency. His wise direction of these programs will hasten the city's return to normal.

The problem of drying out homes before freezing weather presented serious difficulties. Many requests were received in my office for assistance. Therefore, as an additional assistance to the people of Fairbanks, I obtained the services of Mr. William C. Cullen and Mr. Clinton W. Phillips, of the Bureau of Standards, who are experts in this field. They accompanied me to Fairbanks and provided assistance to homeowners. Their report is contained in the appendix of the attached report.

In closing, Mr. Chairman, let me say that I appreciated the opportunity to go to Fairbanks and Nenana to review first hand the damage suffered by those two cities. I hope the committee and the Congress will act promptly in initiating the measures necessary to prevent a recurrence of such a tragedy.

Sincerely yours,

ERNEST GRUENING,
U.S. Senator.

FOREWORD

Almost continuous rains during the period August 11–14, 1967, in the Fairbanks, Alaska, area resulted in widespread flooding from overflow of the Chena and Tanana Rivers. The Chena River crested near 19 feet or about 7 feet above flood stage, putting all of Fairbanks and much surrounding terrain under water. The flood was the worst in the history of Fairbanks and was Alaska's worst natural disaster since the 1964 Good Friday earthquake that killed 115 persons and caused $500 million property damage. Actually Fairbanks suffered a worse disaster than did any of Alaska's earthquake stricken cities. In these a good many homes escaped serious adverse effects. In some the damage was slight. In Fairbanks every home and business suffered damage, in many cases serious.

On August 17, 1967, the President of the United States declared Alaska a major disaster area because of storm and flood damage. He allocated $1 million in Federal funds for emergency relief and restorative work.

The "major disaster" declaration made by the President under the Federal Disaster Act, Public Law 81–875, permitted Federal assistance to the city of Fairbanks for debris clearance, protective, health and sanitation measures, and the emergency repair of essential public facilities.

The severity of flood conditions at Fairbanks prompted the Senate Committee on Public Works to send a member of the committee to investigate the situation in that city with instructions to report back to the committee with recommendations.

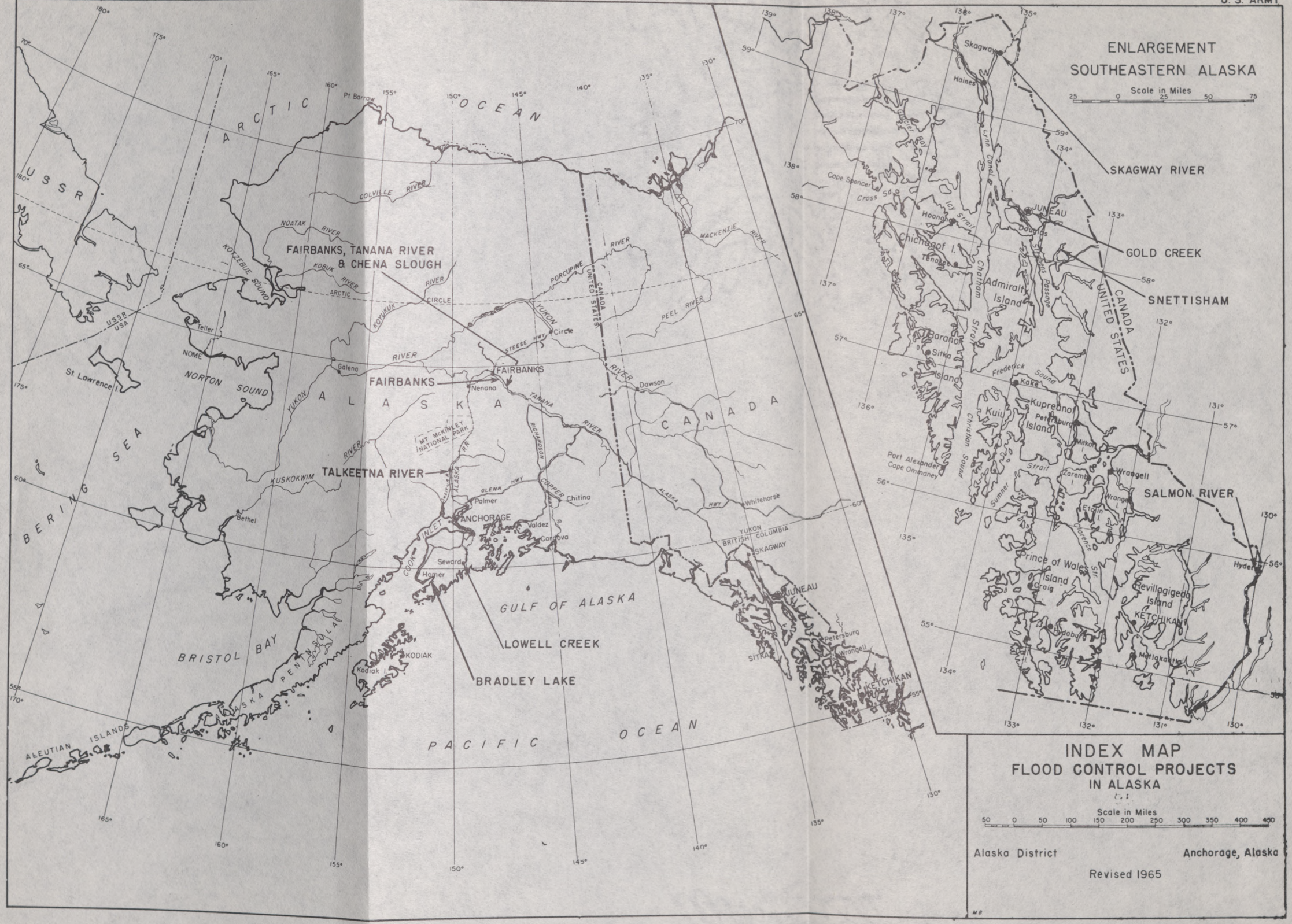
This report contains information on the Fairbanks flood, together with other pertinent details, including recommendations for remedial action.

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CORPS OF ENGINEERS

U. S. ARMY



ENLARGEMENT
SOUTHEASTERN ALASKA

Scale in Miles
25 0 25 50 75

INDEX MAP
FLOOD CONTROL PROJECTS IN ALASKA

Scale in Miles
50 0 50 100 150 200 250 300 350 400 450

Alaska District — Anchorage, Alaska

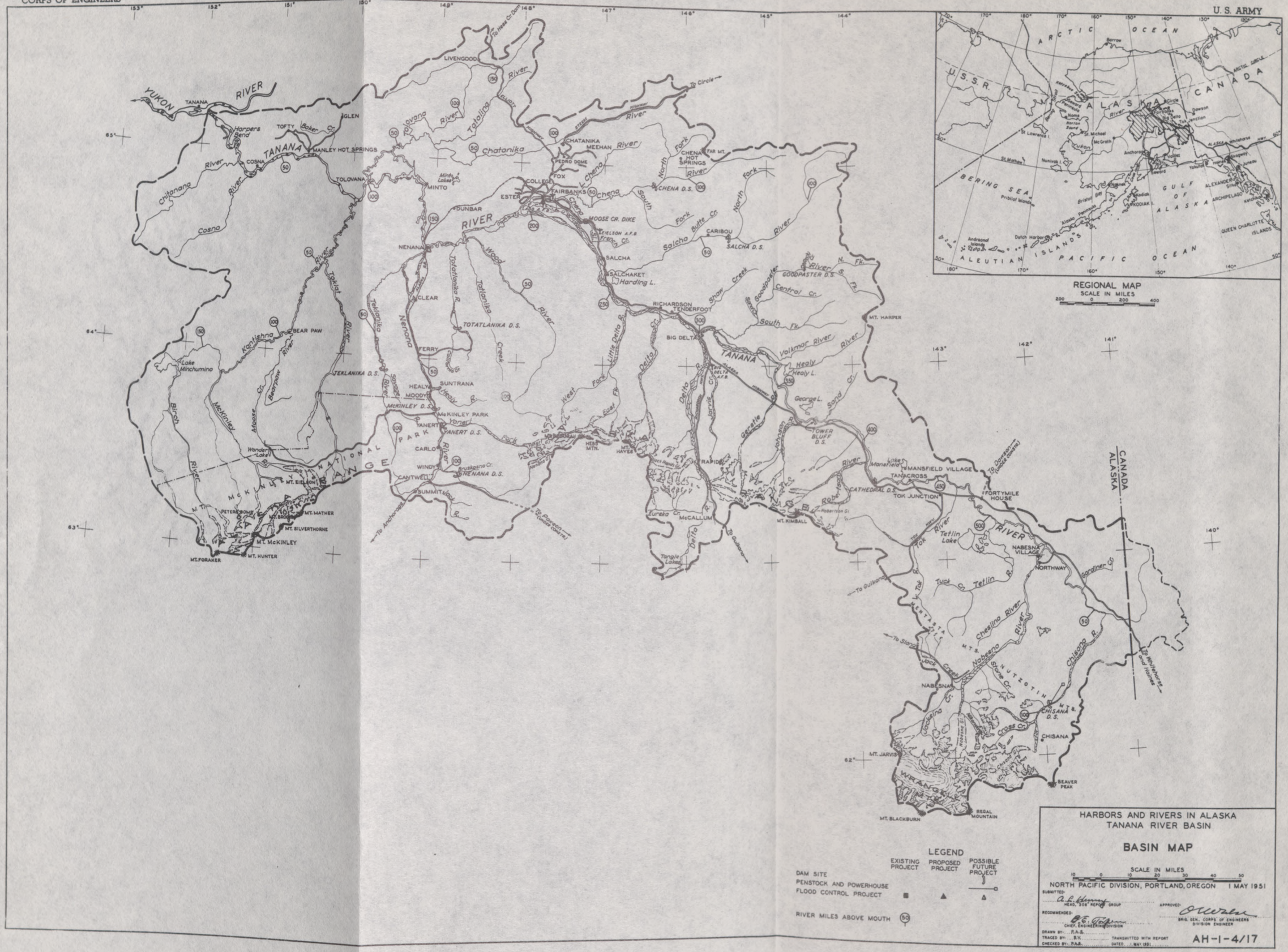
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CORPS OF ENGINEERS

U. S. ARMY



REGIONAL MAP
SCALE IN MILES
200 0 200 400

LEGEND

	EXISTING PROJECT	PROPOSED PROJECT	POSSIBLE FUTURE PROJECT
DAM SITE			
PENSTOCK AND POWERHOUSE			
FLOOD CONTROL PROJECT	■	▲	△

RIVER MILES ABOVE MOUTH (50)

HARBORS AND RIVERS IN ALASKA
TANANA RIVER BASIN

BASIN MAP

SCALE IN MILES
10 0 10 20 30 40 50

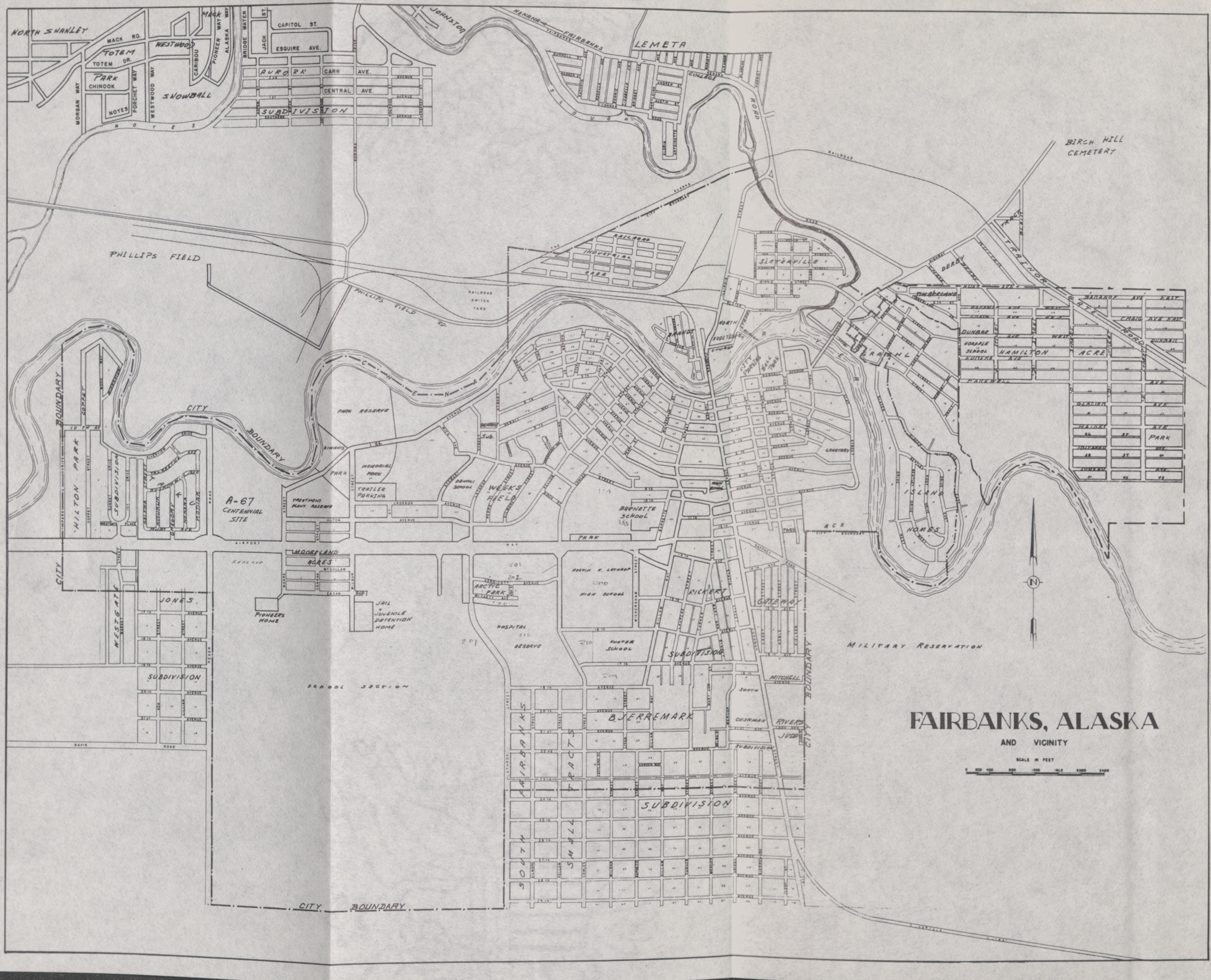
NORTH PACIFIC DIVISION, PORTLAND, OREGON 1 MAY 1951

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PLATE 17

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FAIRBANKS, ALASKA

AND VICINITY

SCALE IN FEET

0 200 400 800 1200 1600 2000 2400

83-455 O - 67 (Face p. 1) No. 1

THE DISASTROUS FAIRBANKS, ALASKA, FLOOD OF AUGUST 1967

REPORT OF INSPECTION

The inspection party, headed by Senator Ernest Gruening, left Washington on Wednesday, August 23, and returned on Saturday, August 26, 1967.

In addition to Senator Gruening, the inspection party included members of the committee's professional staff and representatives of the National Bureau of Standards.

The personnel from the National Bureau of Standards were Mr. William C. Cullen, building technologist, and Mr. Clinton W. Phillips, mechanical engineer. Mr. Cullen and Mr. Phillips are authorities on building problems, especially as they relate to water damage.

The inspection party arrived in Fairbanks on Thursday morning, August 24, 1967, and was met by Col. E. L. Hardin, District Engineer, Corps of Engineers, Alaska District. The party proceeded to inspect flood damage at the Alaska 1967 Centennial, which is on the main highway leading into the city of Fairbanks.

The exposition grounds suffered severe damage and all buildings had been inundated by the raging waters of the Chena River, whose natural channel coursed nearby. The tracks of the miniature Alaska Railroad had been undercut by the swift waters and toppled into the river. At the time of inspection a dollar value had not been placed on the damage, but it would be extensive. It was understood that no attempt would be made to open the exposition for the remainder of the 1967 season.

Following inspection of the Alaska '67 site, Colonel Hardin gave a briefing on the measures that were being taken to restore the city to normal. These included the awarding of contracts for clearing and removal of debris, patching streets, operation of city dumps, and distributing and servicing of portable toilets for homes without city water and sewage. The carrying out of these functions was evidenced during the party's stay in Fairbanks.

Debris placed in the street by businesses and private interests was rapidly removed, which is instrumental in bringing a return to normal.

Colonel Hardin estimated total damage at $178 million, the major portion of which occurred in the private sector.

Following the briefing by Colonel Hardin, the inspection party began a tour of the various residential and business sections of the city.

Many scenes of severe destruction were viewed—foundation failures, damaged heating plants, uprooted oil storage tanks, and other structural damage.

The party visited the Island Homes and Hamilton Acres subdivisions on the north bank of the Chena River as well as the Westgate and Taku Acres. Damage was extremely heavy in all sectors of Fairbanks.

Practically all homes had water extending several feet above the first floor level. Basements were completely flooded. Many basements had been finished as living quarters, which compounded the resultant damage.

A tour through the business section of the city revealed that it also suffered extensive damage. Merchandise stored in basements was, in most cases, completely ruined. Other stocks on the ground floor, while in some cases not competely submerged, had but little salvage value. A major cleanup was in progress by most business establishments—dewatering of basements, clearing of debris, and other necessary rehabilitation measures were being taken to permit operation of the facilities. It was apparent that most establishments were making a determined effort to open for business as quickly as possible.

Following the inspection of the flooded areas in Fairbanks, the party met with the Citizens Coordinating Committee, a local group pledged and dedicated to restoring Fairbanks to its preflood condition.

The views expressed by local citizens at this meeting indicated the need for construction of permanent flood control improvements to prevent a recurrence of the recent high-water conditions in the Chena River Valley.

During this meeting, the representatives of the National Bureau of Standards advised the committee on methods to speed the drying out of flood-damaged homes. In brief, they recommended occupying and heating the home in order to dry out the insulation. High heat and ventilation should be used and the walls left undisturbed. The field report prepared by the Bureau of Standards personnel on this subject is set forth in the appendix on page 38.

DESCRIPTION AND HISTORY OF AREA

The Tanana River Basin extends westerly from the Alaska-Canada border about 350 miles and its greatest width lies on the northern slopes of the mountain barrier that separates drainage from the Gulf of Alaska and the Bering Sea. The major portion of the Tanana River drainage lies in Alaska although about 500 square miles are in Canada. The total drainage area contains about 44,000 square miles.

Chena River drains an area of 2,070 square miles to the northeast of Fairbanks. The area lies on the southwest slope of the low divide between Tanana River and the Yukon River. The highest point of the divide between Chena River and adjacent basins is Far Mountain at elevation 4,732. Chena River rises near the divide at elevation 3,600 and flows 141 miles in a westerly direction to join the Tanana River near Fairbanks. In the lower 100 miles the stream flows in a meandering course through a broad alluvial valley which is constricted at only a few locations.

The development of the Tanana Basin has occurred in two stages. The discovery of gold near the present city of Fairbanks in 1902 brought an immediate influx of prospectors and miners, and, after large fluctuations in population, finally resulted in a stabilized mining industry which has been the basis of the economy of the region until recent years.

With the advent of World War II and the realization of the importance of Alaska in the national defense effort, a new factor was introduced which caused a second stage of growth in the basin. The expenditure of large sums of Federal money for the construction of military facilities, combined with the demand for service industries to serve the large construction forces as well as troops stationed at these facilities, has resulted in a rapid growth far exceeding that due to the mining industry alone.

Under the drive of military needs, the Alaska and Tok Highways were completed and the Richardson Highway improved. Reconstruction and modernization of the Alaska Railroad was also accomplished and the construction of many airfields opened the country to this mode of travel. The ready accessibility provided by these various means of transport has opened wide the basin to all types of development and has spurred large gains in population.

Fairbanks was founded at the original point of transfer of freight from the Tanana River and, from this beginning, developed into the trade and financial center for the entire territory north of the Alaska Range. Termination of the Alaska and Richardson Highways at Fairbanks has furthered development in this area, and the construction of a large Air Force base (later converted into an Army base) at the edge of the city caused further concentration of development in the area. This base was likewise inundated and severely damaged. The present population of Fairbanks, including the unincorporated area, is about 35,000.

PAST AND PRESENT FLOODS

The three largest floods of recent times prior to the August 1967 flood in the Fairbanks area occurred in 1930, 1937, and 1948. The floods of 1930 and 1937 accurred before the establishment in July 1947 of the streamflow station on the Chena River at Fairbanks. Only limited information is available regarding these two floods. The May 1948 flood, with a maximum discharge of 24,200 c.f.s. and a peak stage of 14.2 feet (flooding begins at a stage of 12 feet), was the result of spring snowmelt and ice breakup. During the winter of 1947–48 higher than normal precipitation in the form of snowfall accumulated and this condition together with an unusually cold spring and a sudden warming trend were the factors which caused the high flows. The out-of-bank period lasted from May 17 to May 30 or for about 2 weeks. An estimated 33 percent of the Fairbanks area was inundated during the flood.

Meteorological conditions that produced the heavy rainfall in the Fairbanks area in August 1967 were the result of two strong and very deep flows of air. One, a cold flow from the Arctic Basin over northern Alaska, and the other an unusually warm and moist flow from the central Pacific over southern Alaska. The confluence of these airflows over central Alaska caused a strong frontal zone and the resulting heavy rainfall. Undoubtedly, the rainfall in the Fairbanks area was augmented by orographic effects in the headwaters of the Chena and tributaries of the Tanana Rivers.

Hydrological conditions associated with the flood were a very wet July with streams flowing above seasonal normal. Rainfall commenced on or about August 9, with very heavy rainfall in excess of 3 inches being reported at Fairbanks on August 12. Total rainfall at Fairbanks for the period August 9–15 was 6.10 inches.

It is understood that the Weather Bureau has no formal flood or river forecast service in Alaska. Recently, the Congress provided funds enabling the establishment of a hydrologic position in Alaska. This permitted the Bureau to commence a survey on service requirements and to begin a small installation program of hydrologic equipment. However, available resources did not permit an effective service during the recent flood situation. The only river gage above Fairbanks on the Chena River failed early in the flood.

The Chena River at Fairbanks crested at 18.8 feet on August 15, 1967, 6.8 feet above flood stage. This unusual flood event was the highest of record, and only one other high-magnitude flood caused by rainfall is on record—August 1930 (15.2 feet). The two other major floods were the result of spring snow melt and ice breakups—May 1937 (15.9 feet) and May 1948 (14.2 feet).

HISTORY OF CONGRESSIONAL AUTHORIZATIONS PROVIDING FOR FLOOD PROTECTION AT FAIRBANKS, ALASKA, AND VICINITY

Prior reports and projects

The act of July 1, 1935 (74 Stat. 441), and the act of June 22, 1936 (49 Stat. 1570), authorized a preliminary examination of the Tanana River and Chena Slough, Alaska, with a view to control of their floods.

In accordance with this directive of the Congress, the Corps of Engineers investigated the problem and recommended construction of a rock and earthfill dike for the protection of Fairbanks. The project would extend from the high ground just east of Chena Slough, known as Moose Creek Butte, across Chena Slough and the low lands to the Tanana River, a distance of 15,500 feet, to divert the overflow of the Tanana River passing through Chena Slough back to its original channel.

The above project was authorized for construction in the act of March 21, 1938, and the project was completed in 1945.

The Flood Control Acts of 1946 and 1948 directed the Corps of Engineers to investigate and determine the feasibility of alleviating flood damages in the Fairbanks area.

In accordance with the above authority, a report was prepared by the Corps of Engineers and transmitted to Congress by the Secretary of the Army on March 25, 1955 (published as H. Doc. 137, 84th Cong.)

The Chief of Engineers in the above report recommended the improvement of Chena and Tanana Rivers, Alaska, to provide for a diversion dam and control structure across Chena River near mile 20, a diversion channel about 5.2 miles along the Chena River to Tanana River, a levee 12 miles long, and necessary drainage facilities, subject to certain conditions of local cooperation, including the furnishing of all lands, easements, and rights-of-way, necessary for construction.

The flood control project was recommended by the Chief of Engineers in House Document 137, and was authorized by the Congress in the Flood Control Act of 1958 (Public Law 500, 84th Cong.). Advance engineering and design funds were appropriated by the Congress in 1960.

However, during the early stages of planning by the Corps of Engineers, it became apparent that the authorized project was inadequate and impractical because of the rapid and extensive economic development which had taken place in the Fairbanks area subsequent to authorization of the project. It also appeared that a water storage project on the Chena River upstream from the new area development would provide a practical solution to the flood problem, protect considerably more property subject to flood damage and, at the same time, constitute a comprehensive, multipurpose improvement.

The Corps of Engineers continued to study the flood problem at Fairbanks using funds that had been made available by the Congress for detailed engineering and design of the authorized project. However,

since the project being proposed had radically changed from that authorized by the Congress in 1958, it was necessary for the Chief of Engineers to seek reauthorization of the contemplated improvements.

Accordingly the Committee on Public Works of the U. S. Senate, on January 6, 1965, adopted a resolution providing the necessary authorization for the Chief of Engineers to study and resubmit his modified proposal concerning flood protection for Fairbanks, to the Congress for its consideration.

At the time of the August 1967 high water in Fairbanks, the survey report being prepared by the district engineer, Alaska district, was in the final stages of preparation and was shortly due to be submitted through the various official channels to the Congress for its consideration.

However, inasmuch as the recent flood established a record at Fairbanks, it will now be necessary to make further hydrologic and damage surveys. Flood damages and benefits will also have to be reevaluated to reflect changed conditions.

It is understood that an additional $50,000 will have to be made available by the Congress to complete the report.

On March 24, 1961, the Committee on Public Works of the U.S. Senate adopted a resolution directing the Chief of Engineers to investigate means of providing flood protection for the town of Nenana, Alaska. This investigation is at present underway and due to be completed in the near future. However as in the case of the Fairbanks study, the flood at Nenana will require additional hydrology and damage survey work, prior to a recommendation being made to the Congress for construction of flood control improvements.

In connection with the further surveys to be made at Nenana by the Corps of Engineers, it is suggested that consideration be given to the desirability of relocating this town as an alternative to construction of a flood control project for protection of the community at its present location.

RECOMMENDATIONS

In light of the recent severe flood damages at Fairbanks, Alaska, and vicinity the following recommendations are made to the Committee on Public Works and the Congress:

1. That the Congress immediately appropriate the sum of $50,000 to enable the Corps of Engineers to complete its authorized investigation of the Chena River flood control project. While the Corps of Engineers investigation of this project was fully funded and scheduled for early completion prior to the August flood, additional investigations are now needed to reflect the recent damages. Sufficient funds are not available to the Corps of Engineers to permit those needed studies and must be appropriated by the Congress.

2. That, at such time as the reports of investigation covering proposed flood protection projects at Fairbanks and Nenana are submitted to Congress, such proposals of the Chief of Engineers be considered for authorization by the Congress at an early date.

3. That, upon authorization of Federal flood control improvements for the protection of Fairbanks and Nenana, Alaska, sufficient funds be appropriated by the Congress to provide for early construction of such projects as may be found necessary by the Chief of Engineers to prevent flood damages in the future.

4. That, in view of the limited flood and river forecasting coverage in Alaska, which did not provide sufficient information during the recent flood, adequate funds be made available to the Weather Bureau at an early date to provide Fairbanks with a river and flood forecasting service.

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PICTORIAL REVIEW OF THE AUGUST 1967 FAIRBANKS, ALASKA, FLOOD

The photographs on the following pages graphically depict the vastness and severity of the August 1967 high water at Fairbanks, Alaska. The various flood-scene pictures on pages 9–24 and on page 35 were obtained through the courtesy of the Fairbanks Daily News-Miner, the Anchorage Times, and various Federal and non-Federal agencies. Grateful acknowledgment is hereby made to those agencies, to Mr. David B. Galloway, executive editor of the Fairbanks Daily News Miner, to Mr. Robert B. Atwood, the editor of the Anchorage Times, and to Mr. Laurence S. Fanning, editor of the Anchorage Daily News, for the use of such material. Other pictures, showing cleanup operations and conditions prevailing after the floodwaters had receded, were taken by Mr. Harold Symes, staff member of the Committee on Public Works.

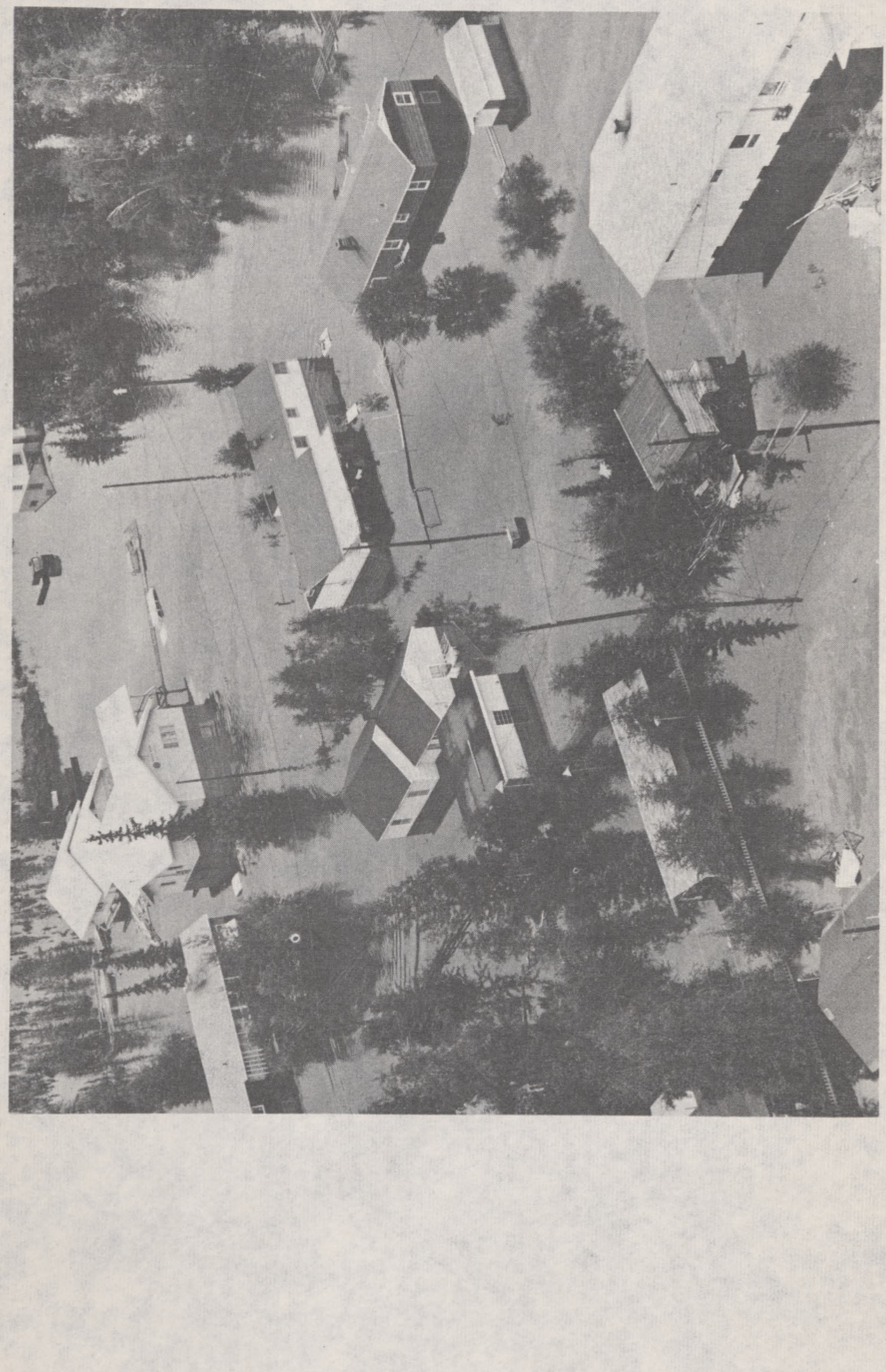
Included in the aerial views is a picture of the flooded Alaska 67 Centennial grounds (p. 11), and a view of downtown Fairbanks (p. 12).

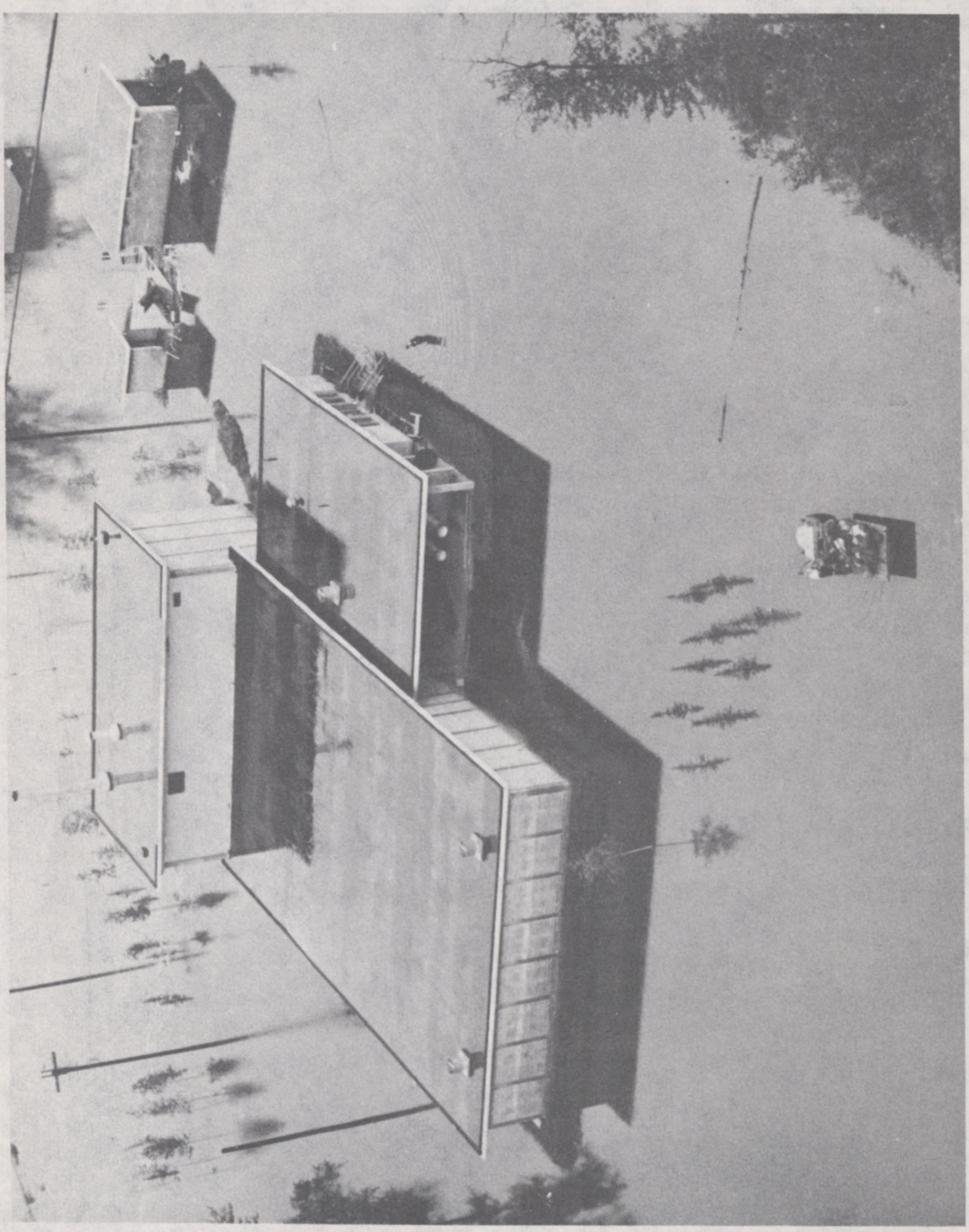

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PARKING
ONLY

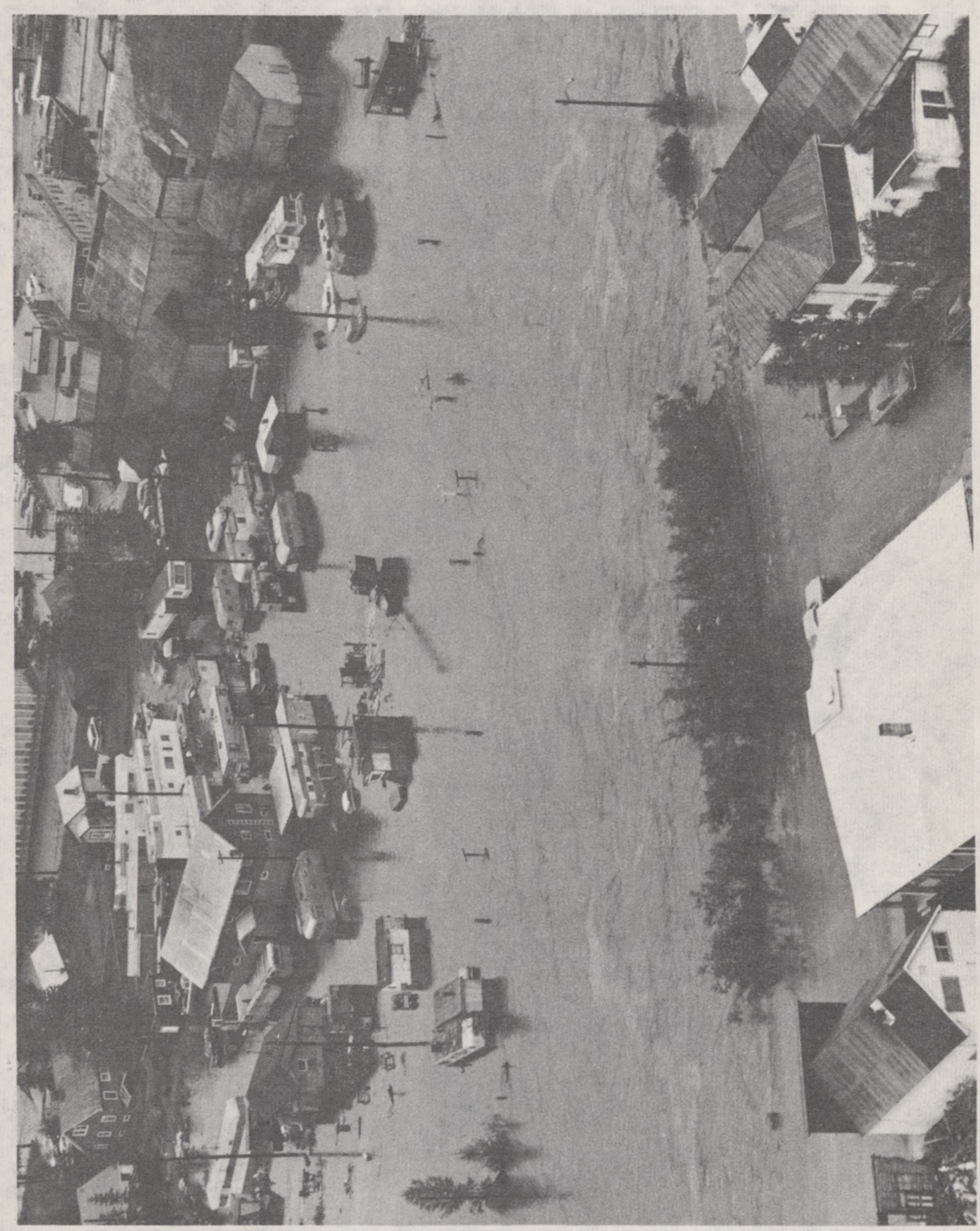

EASON HARDWARE
FAIRBANKS
PLUMBING AND HEATING
PIONEER SUPPLY



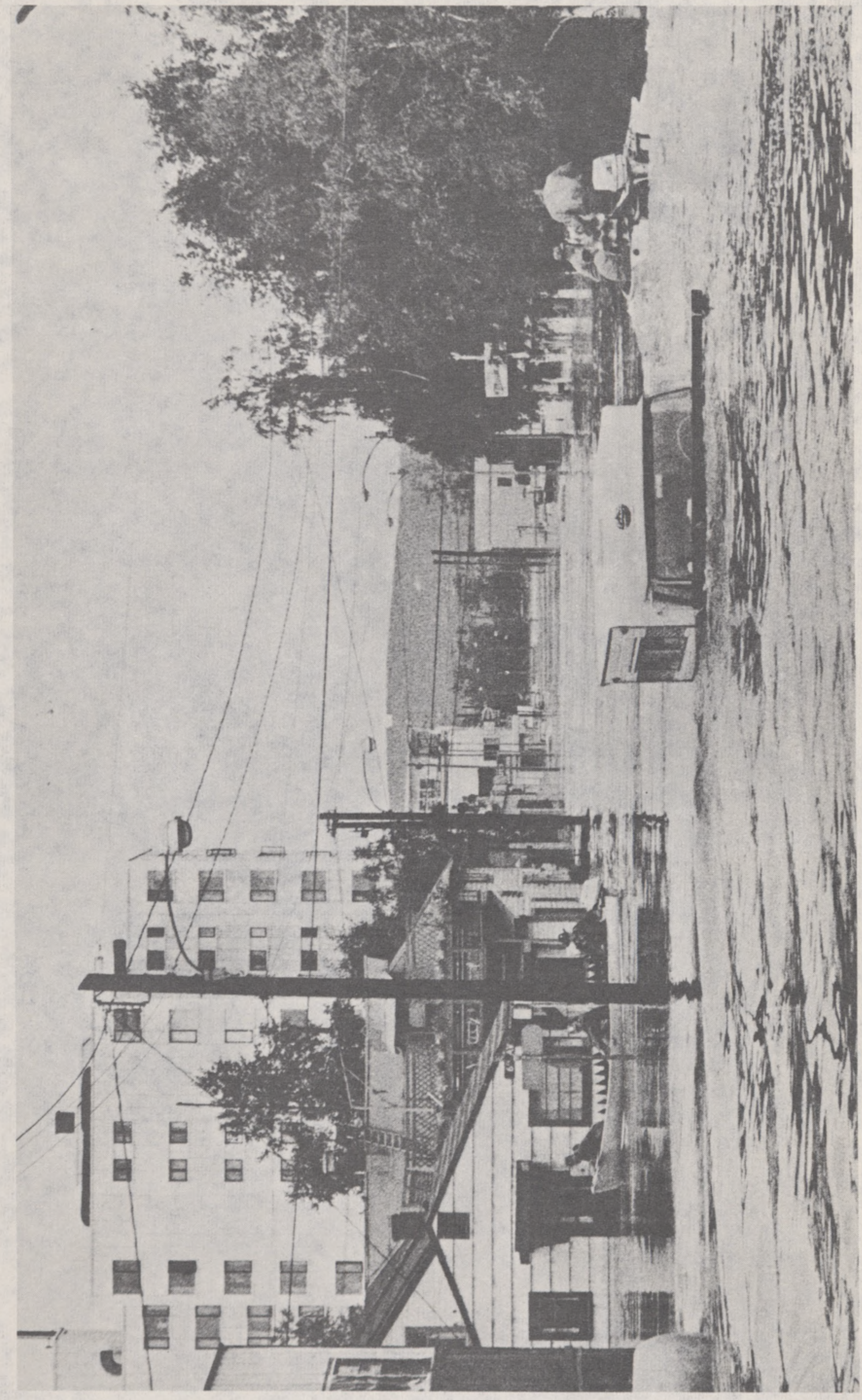




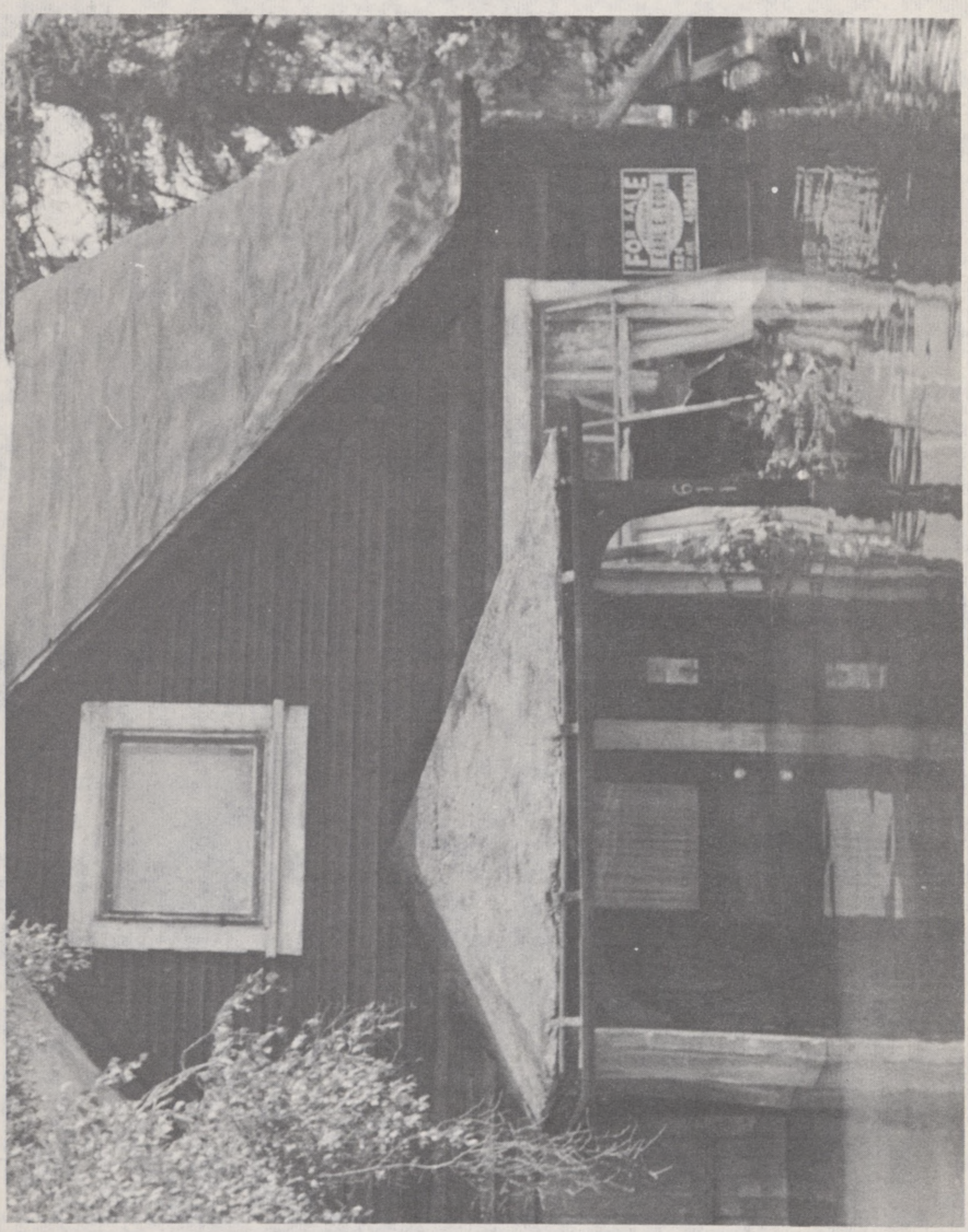




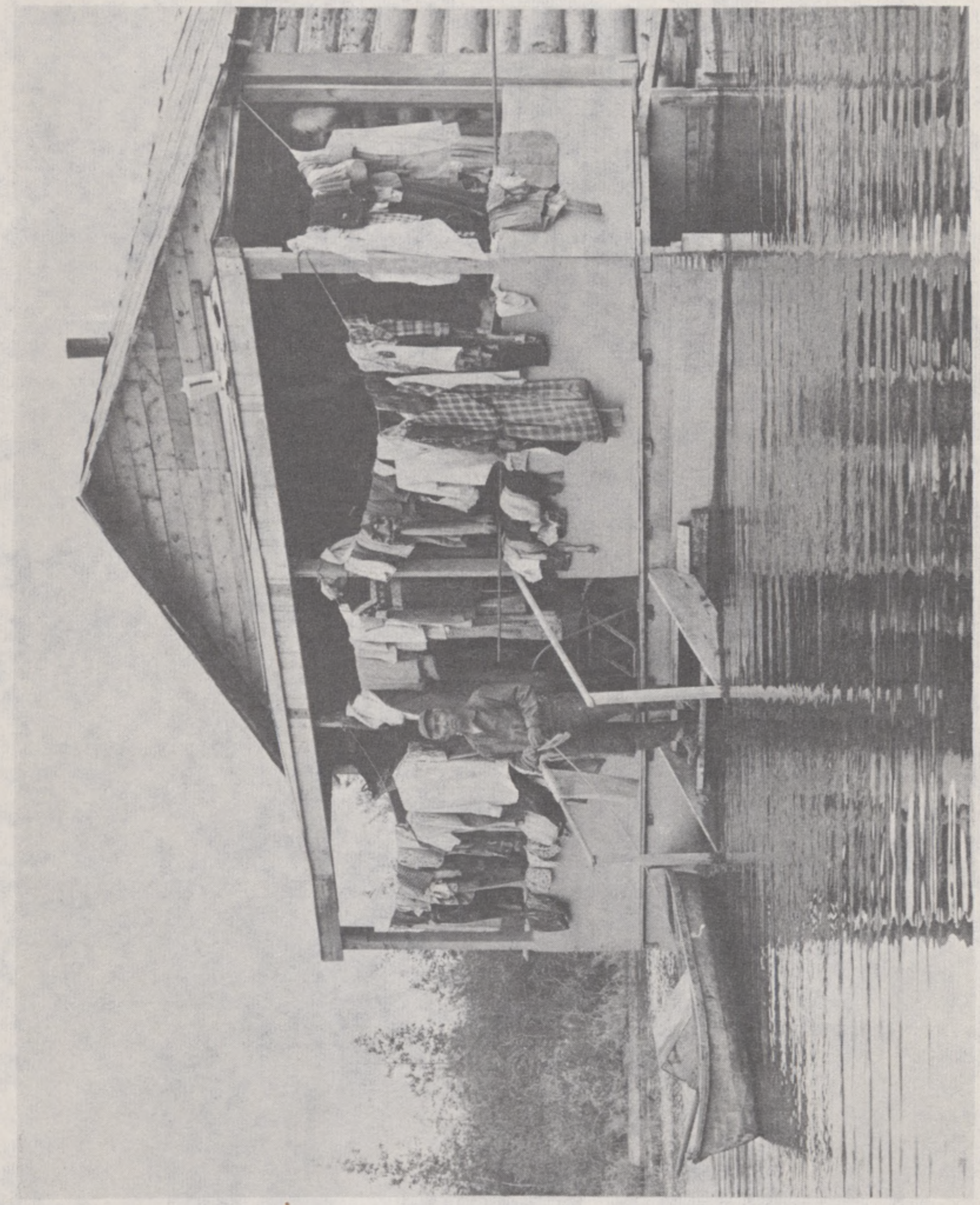




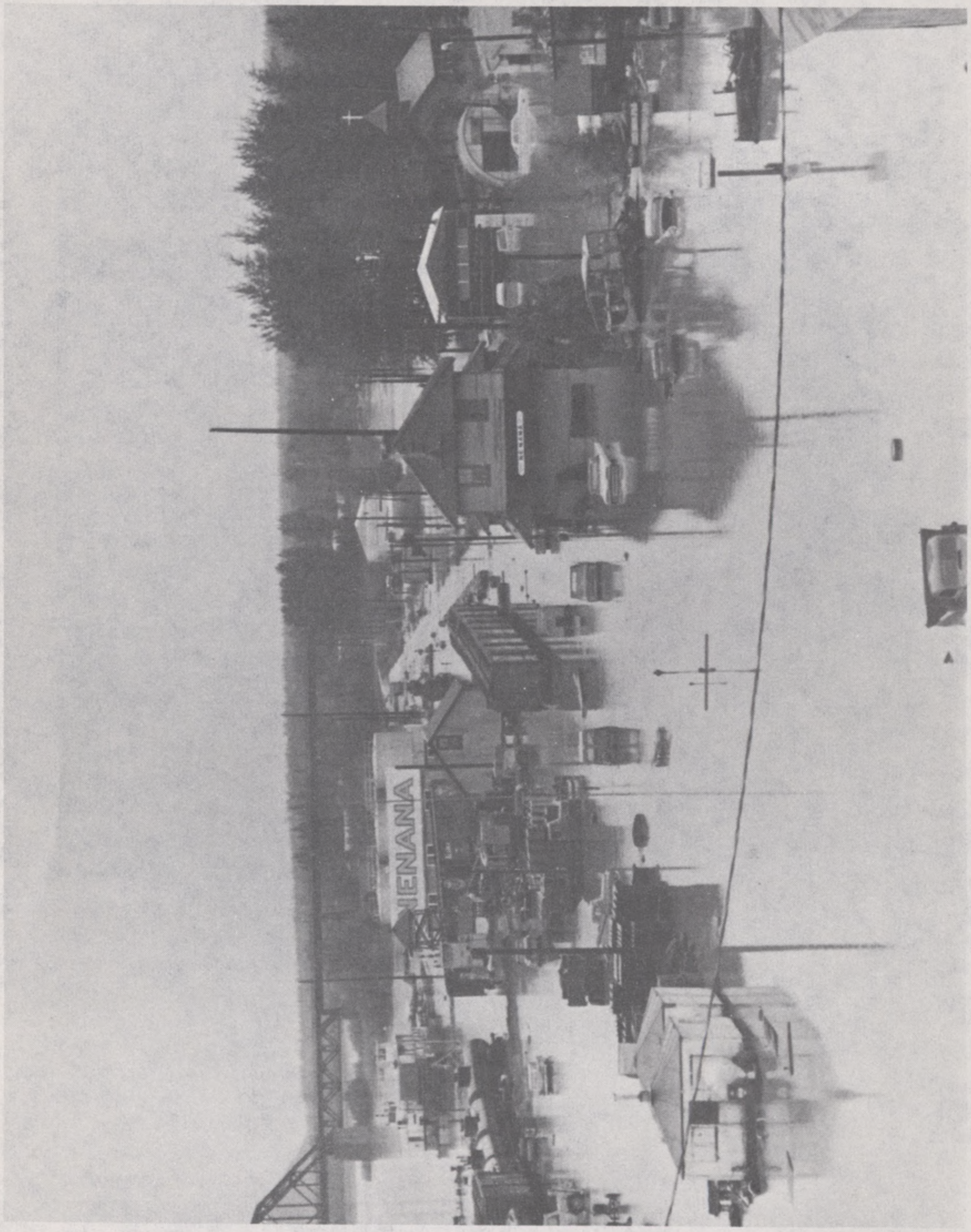

Sour Sarah


FOR SALE


MEHALICK
REAL ESTATE



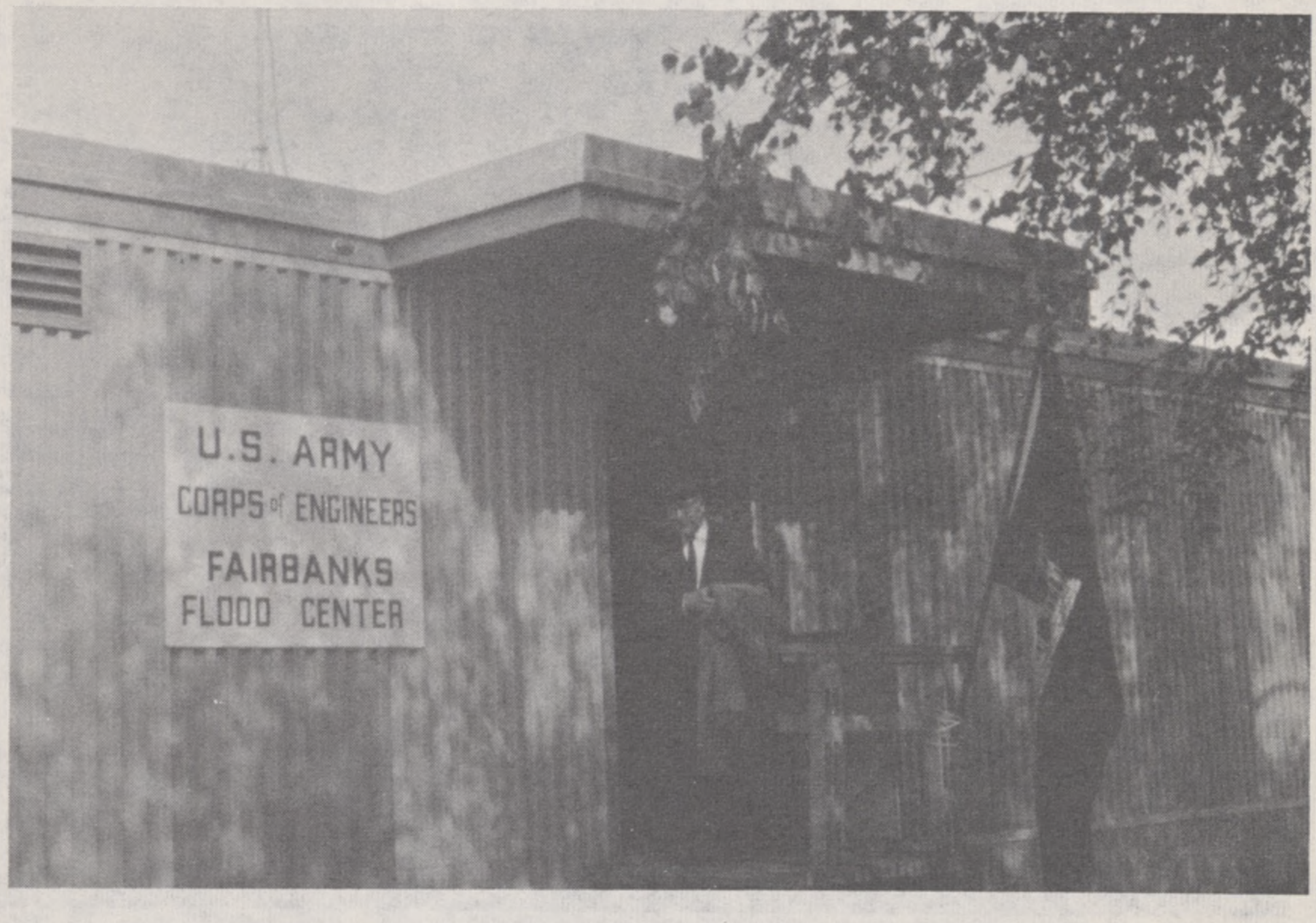
Flooded home in Nenana. The water has been 5 feet higher.

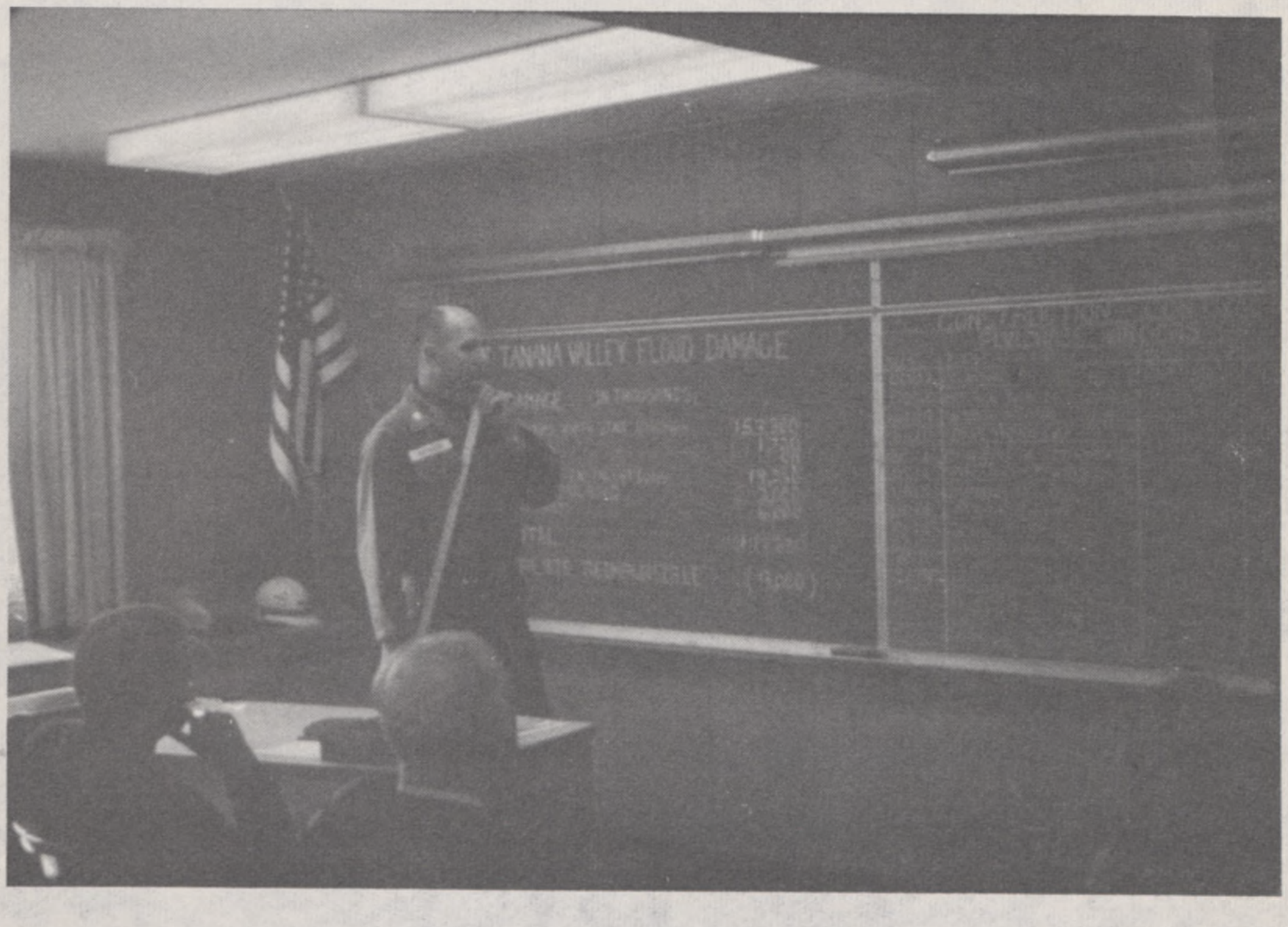

JENANA



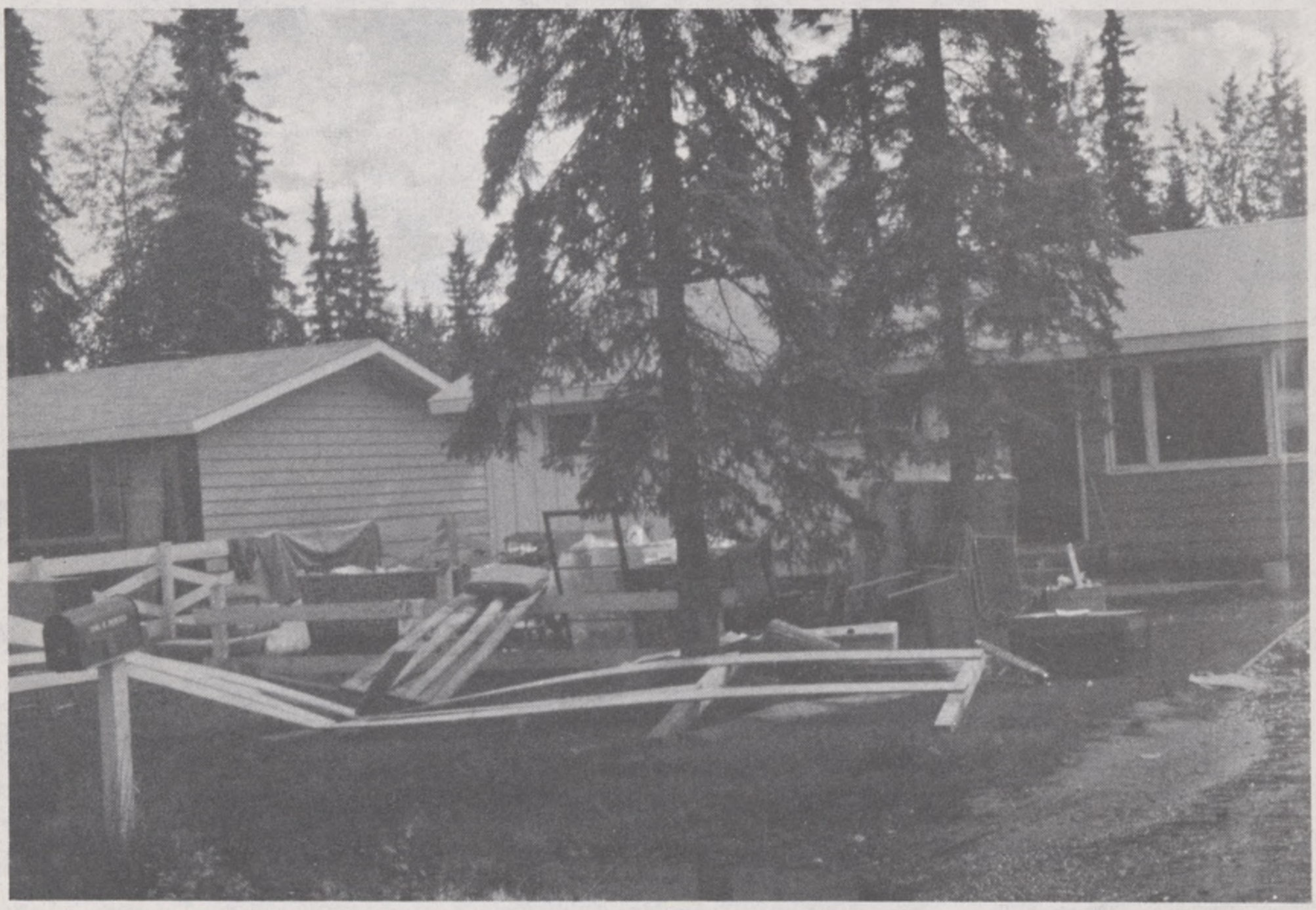


Flood Briefing Conducted by U.S. Army Corps of Engineers



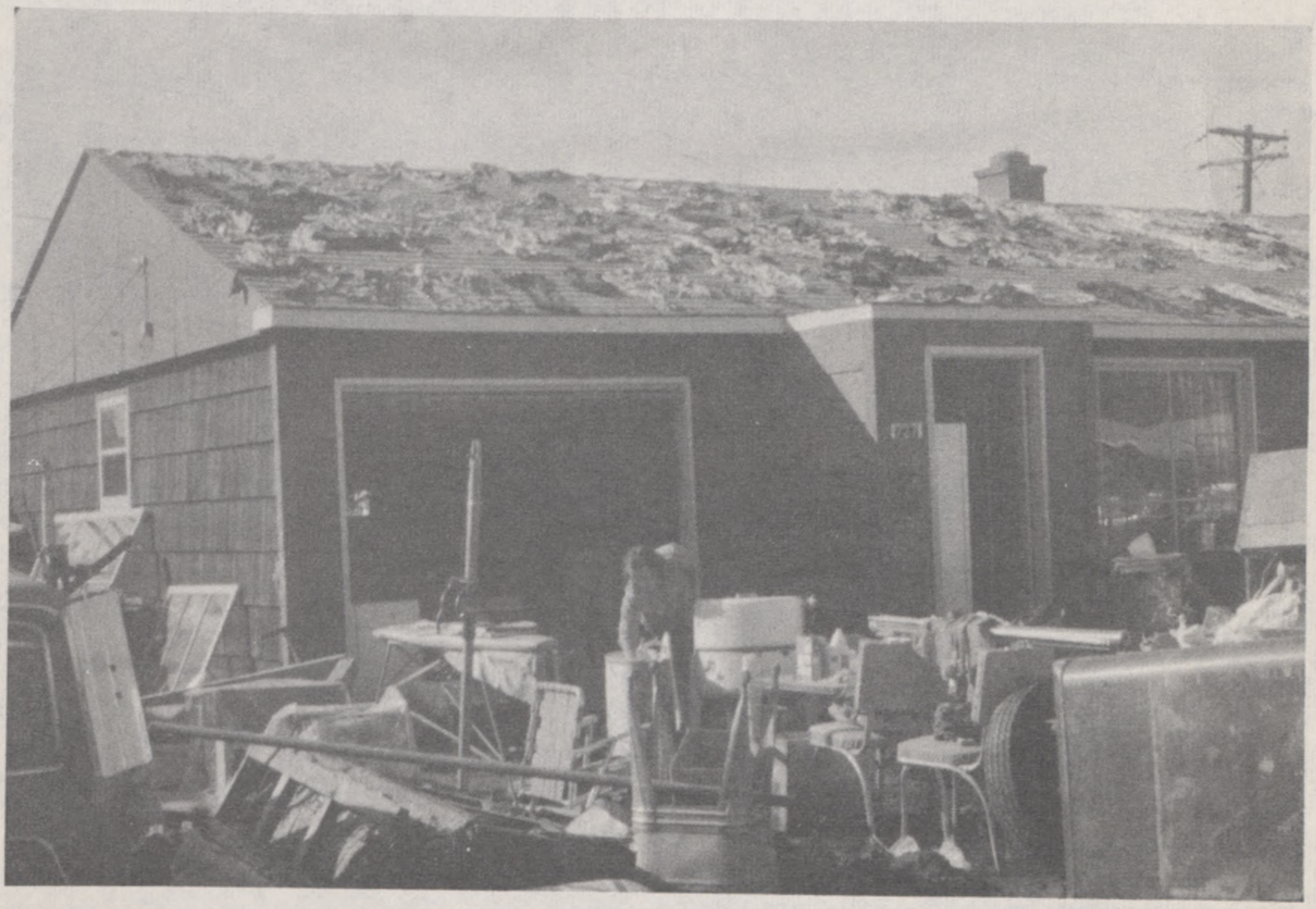


The Flood Waters Recede









Wet clothing was dried on rooftops.



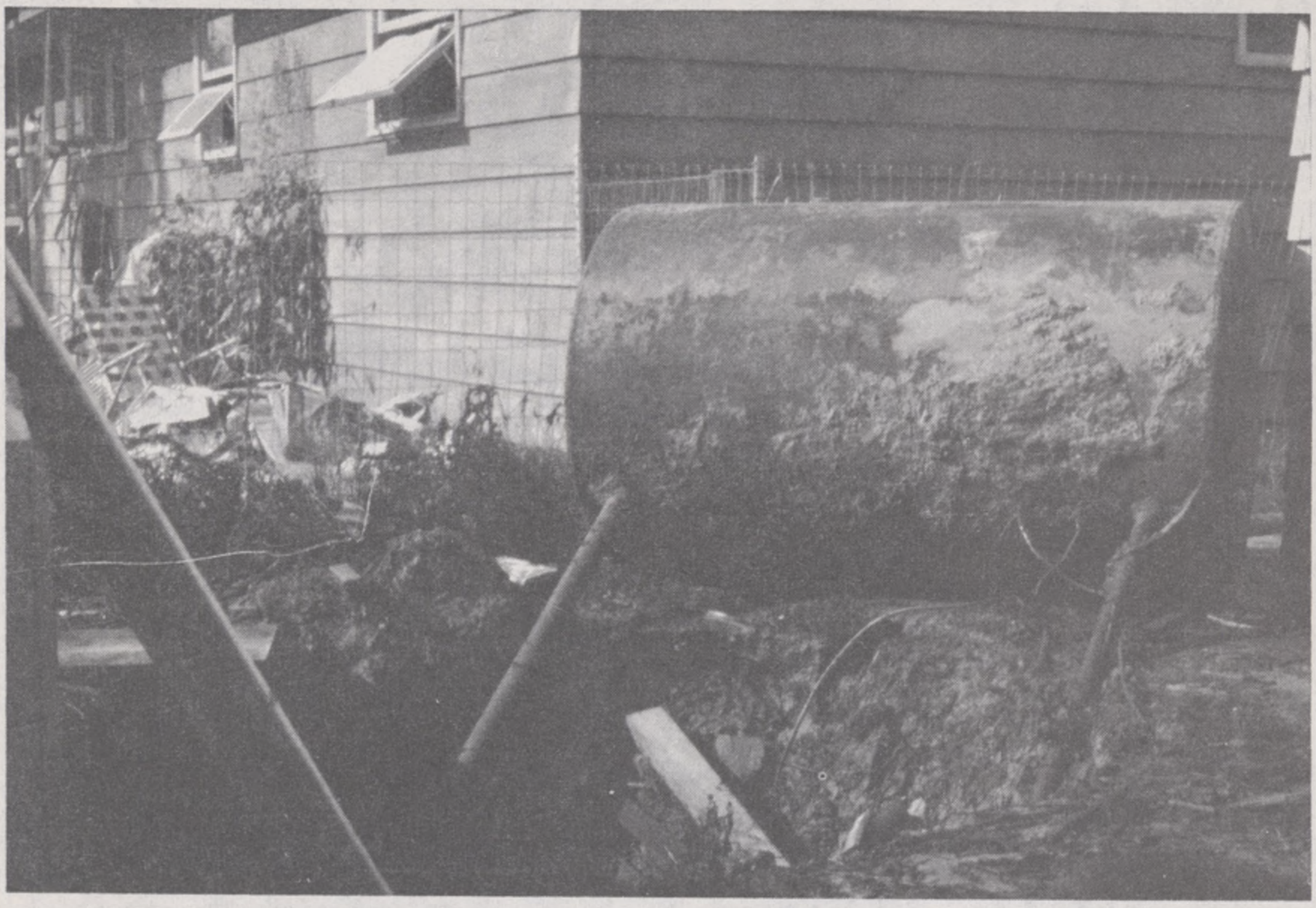
Briefing by Corps of Engineers.



Typical example of home with foundations nearly washed away. Four-by-four timbers were used to prop up structure.





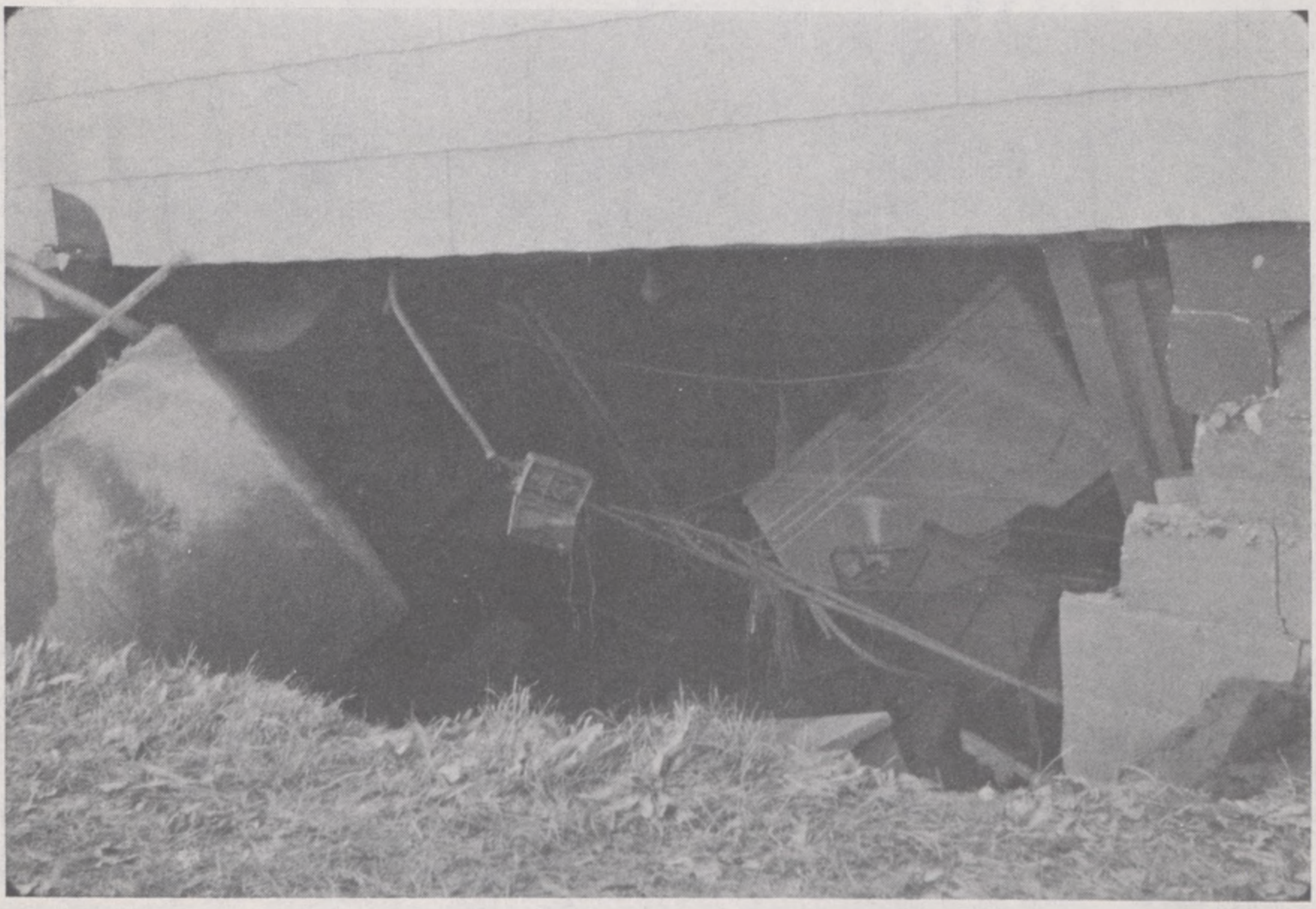


Force of flood waters caused oil tanks literally to pop out. Oil pipe lines to the homes were broken and contents of tanks often spilled out into the ground.

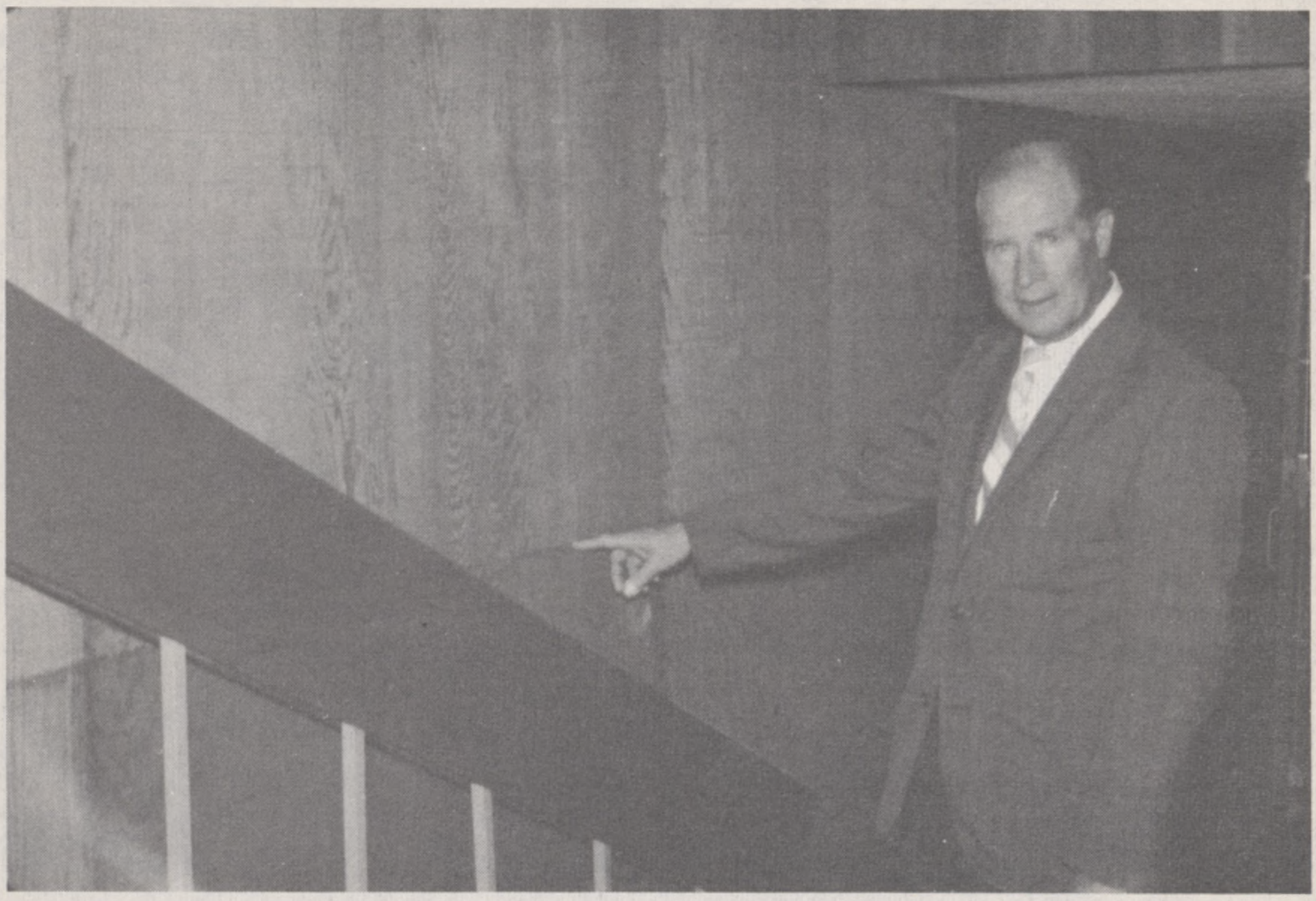




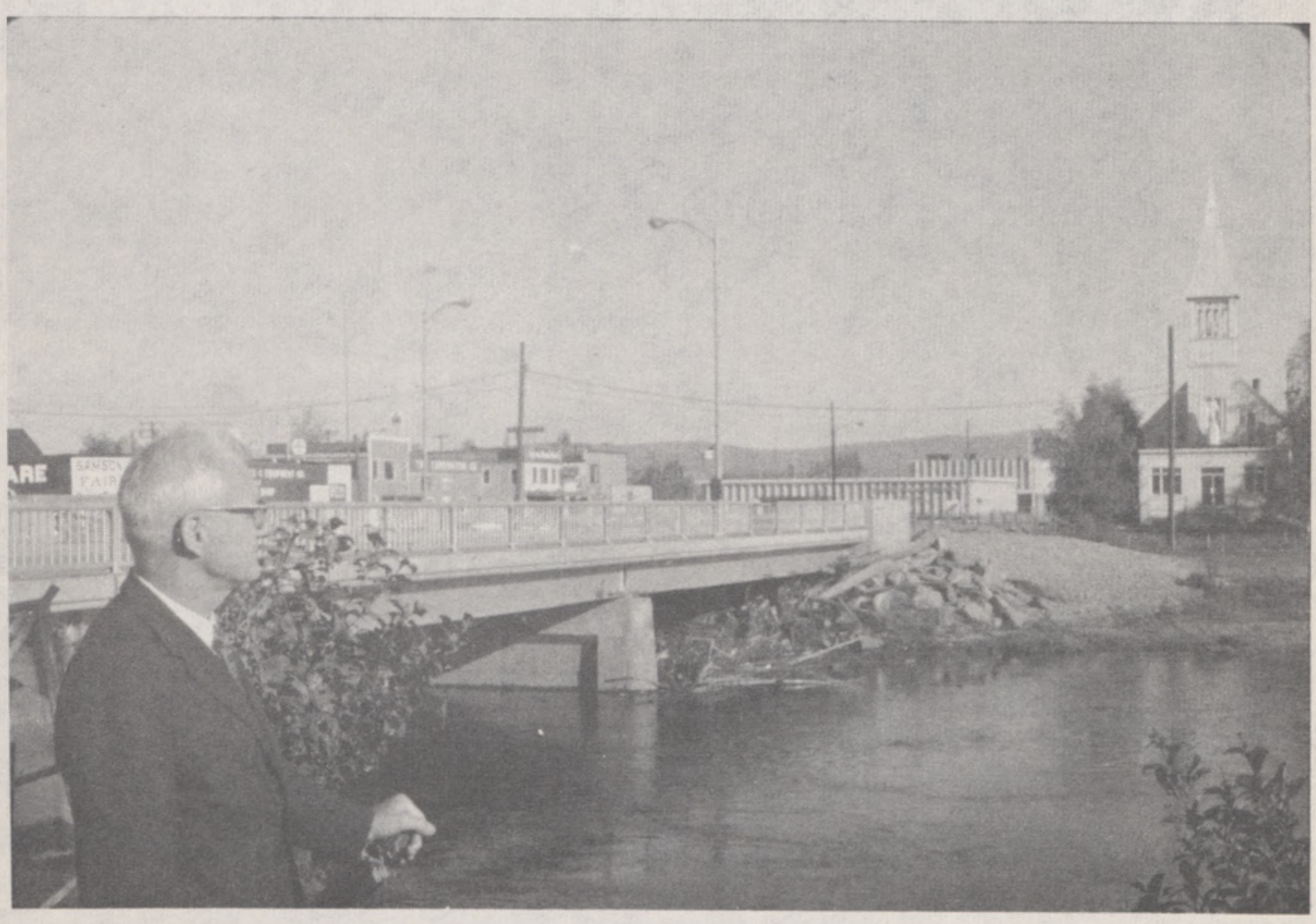




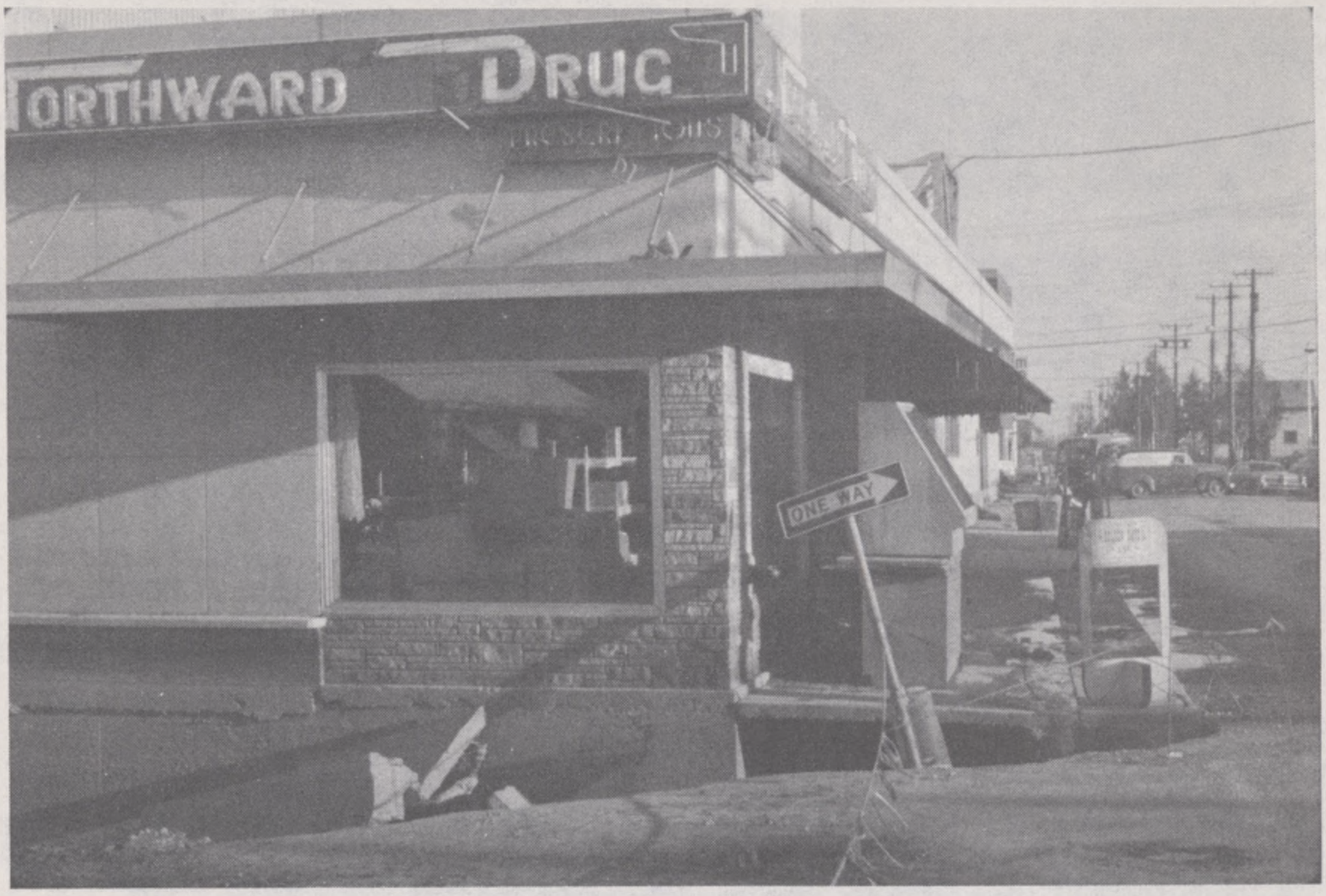
Example of home where foundation was badly damaged, making it impossible for homeowner to enter. Kitchen equipment had fallen into the basement (see bottom photograph).



Senate Public Works staff member identifies high water mark inside house.



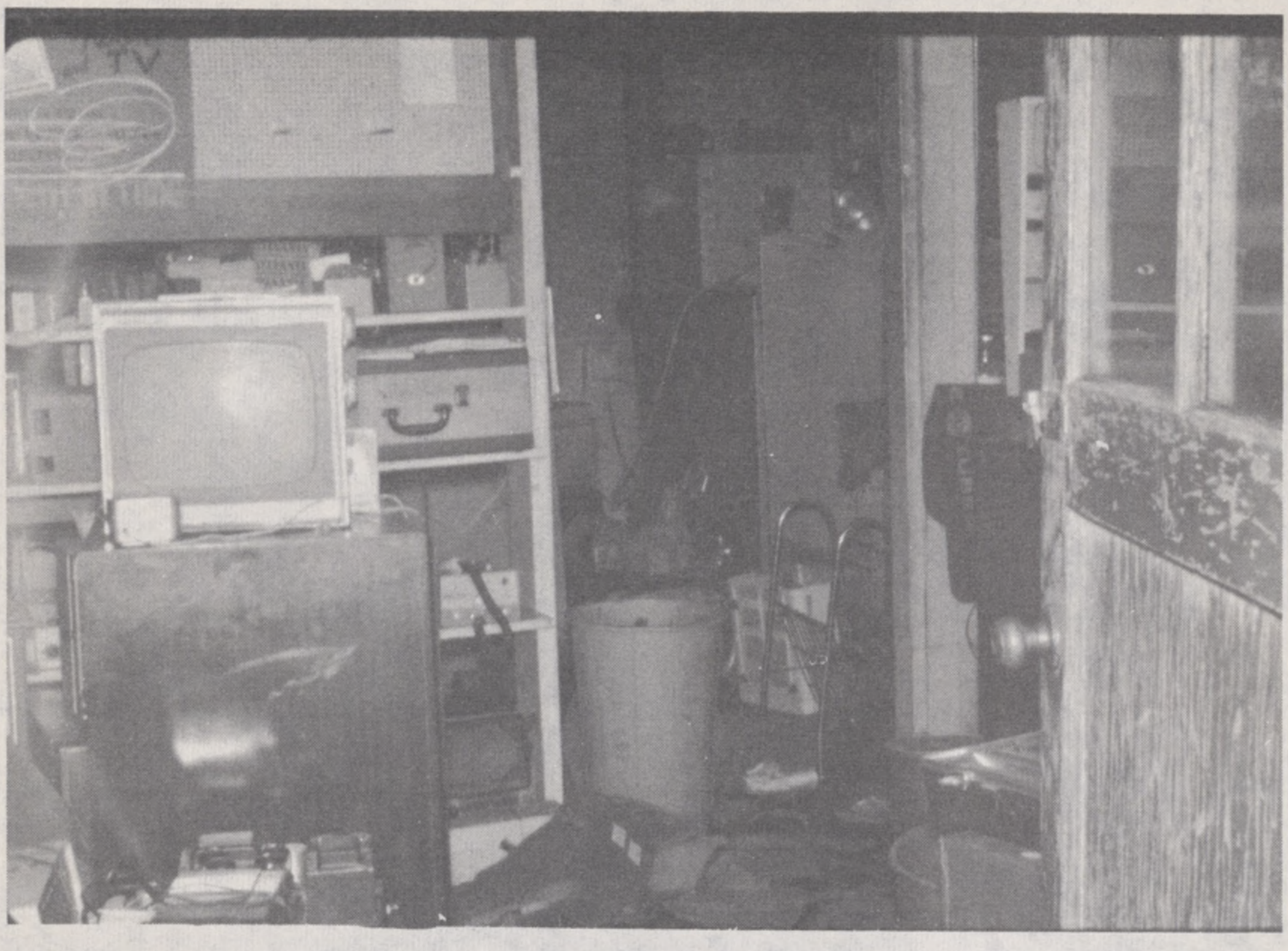
Rains have ceased, but flood waters of the Chena River are still far above normal. Debris is still collecting around bridge.

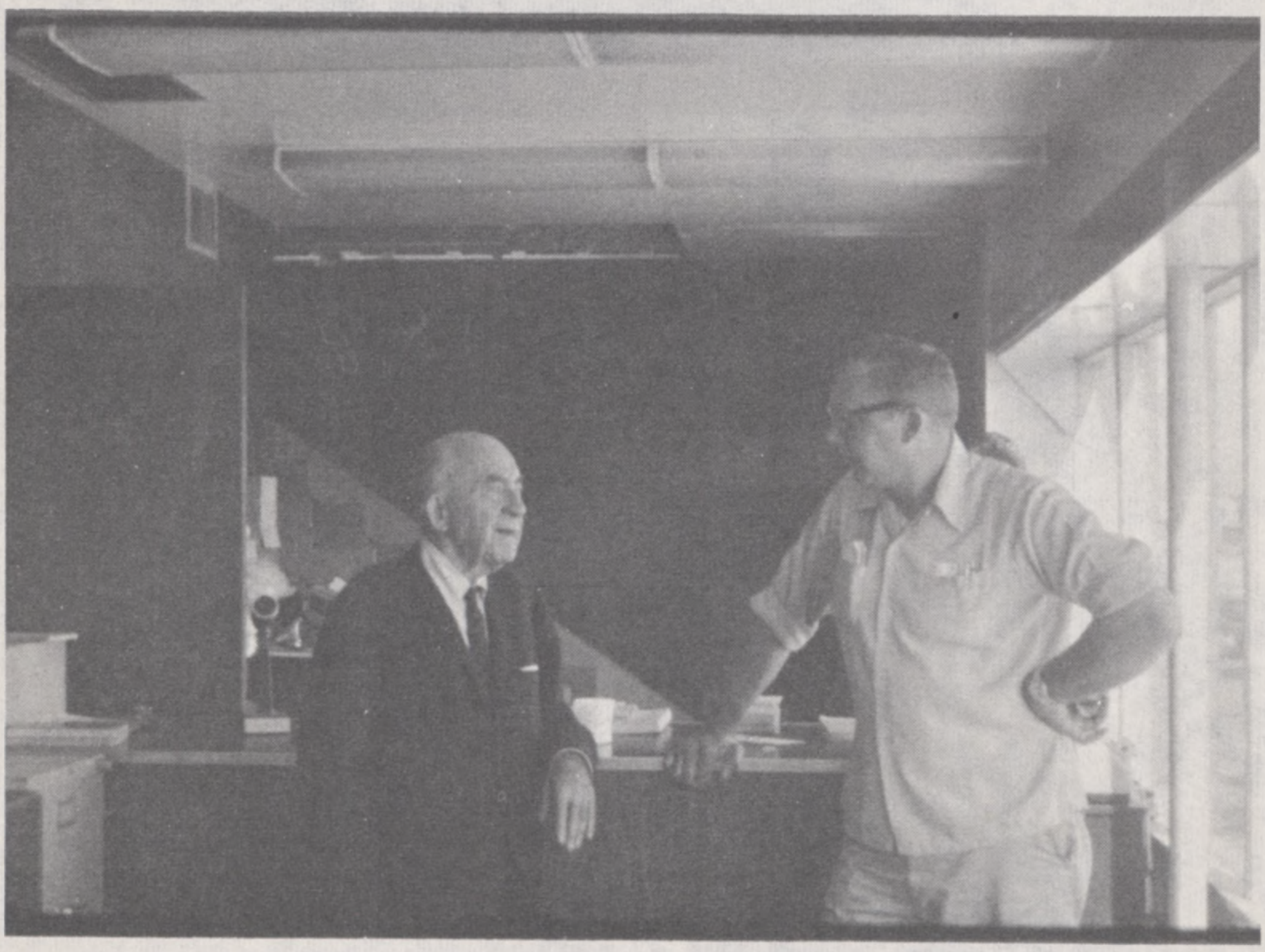


Sidewalk which fell through in business section, leaving 12-foot hole.









Senator Ernest Gruening discussing the flood situation with Mr. Fred Schikora of Fairbanks. Mr. Schikora operates a gas supply business in the city and during the recent disaster furnished food supplies to many flood-stricken families in the South Fairbanks area. Mr. Schikora's interest in the welfare of his neighbors during their time of need, was typical of the generosity and concern shown by the people of this devastated community.

APPENDIX

SUMMARY OF EXHIBITS

The following material has been assembled and published here because it was mentioned in the main report or because of its general value as reference documents.

The exhibits are as follows:

1. Report on survey of flood damage to residential buildings in Fairbanks, Alaska, by Mr. William C. Cullen and Mr. Clinton W. Phillips, National Bureau of Standards, U.S. Department of Commerce.
2. Letter, dated August 17, 1967, of President Lyndon B. Johnson to Gov. Farris Bryant, declaring Alaska a disaster area.
3. Letter, dated August 17, 1967, of the Office of Emergency Planning (re disaster assistance for Alaska).
4. Press release, dated August 25, 1967, of the U.S. Department of Housing and Urban Development.
5. Survey report of the American National Red Cross, dated August 22, 1967. Supplemental report, dated August 28, 1967.
6. Letter, dated August 17, 1967, of Alan S. Boyd, Secretary, Department of Transportation, containing a status report of the Alaska Railroad. Supplemental report, dated August 22, 1967.
7. Small Business Administration Policy and Commentary on It.
8. News stories and editorial.
9. On-the-scene account of flood and aftermath by George Sundborg, administrative assistant to Senator Gruening.
10. News release, dated August 22, 1967, of the Salvation Army, Anchorage, Alaska.

REPORT OF THE NATIONAL BUREAU OF STANDARDS, U.S. DEPARTMENT OF COMMERCE

(By William C. Cullen and Clinton W. Phillips)

1. Introduction

At the request on August 22, 1967, of Senator Ernest Gruening, representing the Senate Public Works Committee, two representatives from the National Bureau of Standards visited Fairbanks, Alaska, with the Senator and two members of the committee staff, Joseph Van Vladricken and Harold Symes, to survey water damage caused by the recent flooding of the Chena River, and to make suggestions for the rapid drying and dehumidification of residential structures.

The NBS individuals selected to accompany the Senate delegation were Messrs. William C. Cullen, materials technologist, Materials and Composites Section, and Clinton W. Phillips, mechanical engineer, Environmental Engineering Section in the NBS Building Research Division.

Prior to the departure of the NBS representatives, a meeting among selected staff members of the Building Research Division was held at the National Bureau of Standards. The purpose of the meeting was to consider the practical approaches for implementing dehumidification procedures of the residential structures. It should be noted here that the importance of achieving rapid drying was due to the fact that freezing weather in the Fairbanks area was only a few weeks away. The theoretical and practical means of drying residences as well as the repair of flood damage were explored in depth. At the conclusion of the meeting, the representatives of the Building Research Division who were to make the field trip were selected. They left for Fairbanks, Alaska, the afternoon of August 23, 1967.

2. Briefing

The survey party arrived in Fairbanks at approximately 9 a.m., on August 24, 1967. A briefing was held at the U.S. Army Corps of Engineers flood disaster headquarters to provide a current status report of estimated damage to both public and private sectors of the economy. Further, the actions being taken to restore utilities and to get residents back in their homes were described. The preliminary estimate of damage to both private and public structures (not including highways and railroads) was about $150 million. In addition, large personal property losses (household furnishings, clothing, etc.) were suffered by the residents of Fairbanks. It was reported that practically every residential structure was affected to some extent by the floodwater.

Cleanup operations had begun in the residential housing areas. Evacuated residents were just beginning to return to their homes. Throughout the briefing, the urgency of getting the structures dry and

in a habitable condition before the advent of freezing weather was stressed.

At the request of Senator Gruening, who pointed out and stressed the need for immediate advice and instructions to the residents of Fairbanks for the rapid rehabilitation of their homes, we described the role of the Building Research Division as one of providing technical assistance and suggesting procedures for the rapid drying of the homes without damaging or disturbing building elements which were in a structurally sound condition. Further, we offered the support of the National Bureau of Standards in other areas where our competence lies, if the need arose. We assured the Senator that our recommendations would be ready before we left Fairbanks the next day.

3. Inspection

3.1 General observations

Fairbanks is located in the Tanana River Basin on terrain which is quite level. A tour of a number of the residential sections verified the opinions expressed at the briefing that every residence, without exception, was affected to some degree by the floodwater. On-the-scene observations of some 30 structures and interviews with a number of the flood victims confirmed the report of the extensive damage suffered in both personal and real property.

The majority of structures had been flooded to a maximum of 36 inches above the living room floor level. Within the city limits of Fairbanks, the majority of structures had basements which housed, among other things, the heating system. Even in the case of the so-called slab-on-grade constructions, crawl spaces were sometimes at below-grade level. In either case, the heating systems were submerged at one time or another during the flood.

3.2 Description of typical residential constructions

The typical residential structure in the area was of frame construction with basements (the majority of which were not finished) and/or crawl spaces below-grade level. The more common heating system consisted of a gas- or oil-fired, hot-air, or hydronic type, which was located for the most part in these below-grade areas. In addition, these areas frequently housed the electrical distribution box.

The typical wall system from inside to out consisted of (*a*) painted gypsum board; (*b*) a vapor barrier, generally polyethylene; (*c*) 3 to 4 inches of insulation (it appeared that the aluminum fibrous glass type of insulation was commonly used but other types, such as mineral wool, both in batt and loose form, were reported to have been used); (*d*) asphalt-saturated, insulated sheathing, or plywood sheathing; and (*e*) exterior wall of wood or asbestos cement siding. Frequently the wood siding was applied in a vertical fashion, which complicates the venting of the wall cavity if penetrations are to be made in the exterior walls at each stud space.

3.3 Condition of the building elements

3.3.1 *Interior walls.*—The gypsum board-type interior walls, although still saturated with water below the flood level, appeared for

the most part to be intact, and it was our opinion that if they were allowed to remain in place they could be expected to regain, upon drying, many of their original strength characteristics. On the other hand, some, not all, of the wood paneling showed warpage and delamination. We recommended that only in cases where damage which could not be easily repaired and was readily apparent should either the wood or gypsum be removed. There was no indication that the vapor barriers had been disturbed or damaged by the floodwater.

3.3.2 *Cavity insulation.*—Insulation in the cavity wall had been wetted and was still in a saturated condition for the portion of the building which had been submerged. However, the portions above the wetted areas appeared to be relatively dry. Even where the wet insulation was still in place, it was apparently undamaged and little if any settlement had occurred. For the most part the insulation appeared to be of the fibrous-glass type. We did not have the opportunity to observe other types of insulating materials. In the majority of cases, the insulation appeared to be in such a condition that replacement was not indicated. Free water had drained from the insulation and did not appear to be a serious consideration even at this early stage.

3.3.3 *Exterior walls.*—No serious damage was observed on the exterior walls despite the severe wetting. Although in many cases the asphalt-saturated insulating sheathing which was located directly beneath the exterior siding was still soaking wet at the time of the inspection, no deformation was apparent. Therefore, the prospect of drying in place appeared to be feasible. The exterior surfaces, generally wood or asbestos cement, were of such a character as to offer water-vapor breathing capabilities to facilitate drying even without supplemental ventilation of the cavity walls. It was recognized that the complete drying of the insulation and the sheathing might not occur before the advent of freezing weather. However, it appeared to us that any damage likely to occur by freezing would present a problem less serious than attempting to ventilate cavity walls by removing sections of the exterior siding. A factor in this conclusion was the shortage of labor and materials in the Fairbanks area to repair the large number of residences affected before the advent of freezing weather.

3.3.4 *Floors.*—In almost every instance floors were in such a condition that the floor covering (resilient flooring, carpeting, wood, etc.) was damaged and in need of repair or replacement. The drying of the plywood subflooring would probably present no serious problems, especially where basements and crawl spaces were ventilated. Little serious warpage, delamination, or structural damage were apparent at the time of the inspection. However, if these conditions were to become apparent, replacement might be indicated in the future.

3.3.5 *Ceiling systems.*—As far as we could determine, the floodwaters did not reach the ceiling systems of any residences.

3.3.6 *Foundation.*—Serious foundation problems were observed in a number of buildings. Although the very serious nature of these problems was recognized, this report does not deal with them. Others have the problems under advisement.

3.3.7 *Electrical system.*—While this report does not deal directly with this area, a few comments may be helpful. It was observed that in a number of residential buildings the electrical service had been

restored and was being used without apparent difficulty, even though portions of the electrical circuits had been submerged during the flood.

3.3.8 *Heating systems.*—The principal damage to heating systems appeared to be due to water and silt contamination of the electrical components. Some of these units had been rehabilitated by drying electrical components and putting them back in operating condition at the time of inspection. In a few instances, structural damage had occurred to heating units, especially those which were located in some below-grade locations where foundation failures had occurred.

4. Recommendations

Based on the information developed during the various briefings, our observations and critical examinations of the damaged structures, discussions with flood victims, engineers, and others familiar with the performance of structures in Alaska, and on considerable laboratory and field experience in these areas, we made the following recommendations to the citizens of Fairbanks to facilitate the early rehabilitation of their homes:

4.1 Remove standing water from the buildings by pumping, bailing, etc.

4.2 Repair the heating system as soon as possible.

4.3 Operate the heating system at a higher than normal thermostatic setting (80° to 90° F.). Leave windows and doors open until the interior of the structure has dried out.

4.4 After the interior has been reasonably dried, continue to operate the heating system at a higher than normal temperature, with doors and windows partially opened to drive out the water from the insulation, sheathing, to the exterior walls.

4.5 Do not remove interior walls or the vapor barriers unless it is absolutely necessary to replace them because of damage. If damage to the vapor barrier is apparent, it should be repaired immediately.

4.6 Do not remove or open exterior walls unless absolutely necessary. Drying of insulation and sheathing in the walls will be hastened if the top and bottom of the exterior walls can be opened by some means at each stud space to provide for increased ventilation of the stud spaces. This procedure should be followed only if it can be accomplished easily and repaired easily. It is important that buildings be dried as much as possible now, and even more important that all flooded buildings be heated during the coming winter to avoid further and serious damage by freezing of water in walls, foundations, and surrounding earth.

5. Promulgation of Recommendations

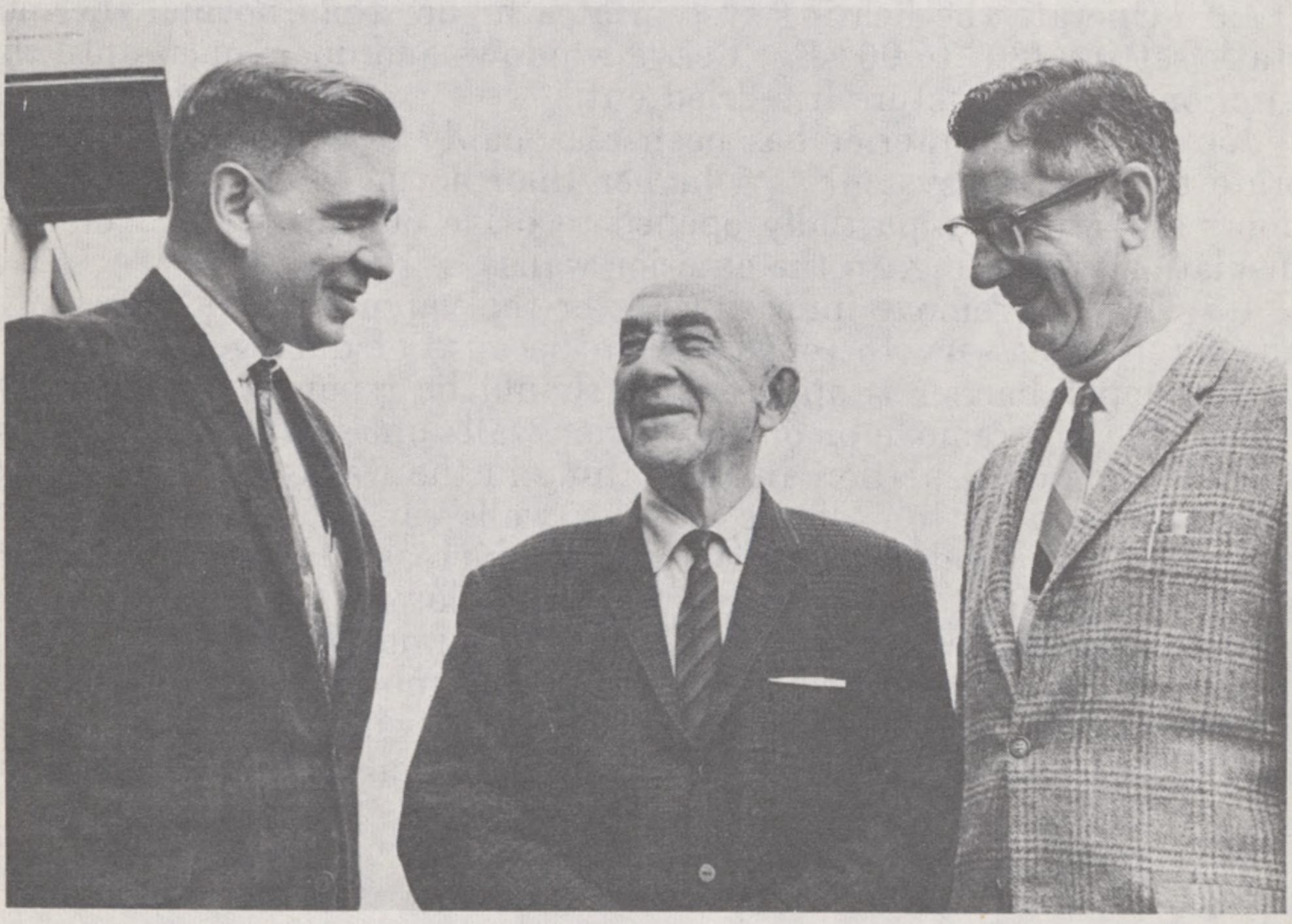
The urgency of getting the above recommendations to the citizens of Fairbanks was recognized. Through the efforts of Senator Gruening, his staff, and numerous other individuals and organizations, the following means of communications were utilized: (*a*) Radio messages over local radio stations by Messrs. Cullen and Phillips during a broadcast to the people of Fairbanks by Senator Gruening; (*b*) local newspaper articles based on the above recommendations; (*c*) leaflets prepared by the newspapers and distributed through various channels to the citizens of Fairbanks; (*d*) meetings with (1) Citizens

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Coordinating Committee, (2) U.S. Army Corps of Engineers, (3) the American Red Cross; and (*e*) direct communication with the occupants of the homes visited during the survey.

6. Acknowledgment

We want to express our sincere appreciation for the cordial welcome, the assistance provided, and the excellent cooperation of the following: (*a*) the citizens of Fairbanks; (*b*) Senator Gruening, his assistant, George Sundborg, and the staff members of the Public Works Committee, Messrs. J. Van Vladricken, and Harold Symes; (*c*) Mr. Keith Miller, secretary of state and Acting Governor of Alaska; (*d*) Colonel Hardin and the U.S. Army Corps of Engineers; (*e*) Mr. Joe Fitzgerald, Federal Field Committee of Alaska; (*f*) Mr. Creath Tooley, Office of Emergency Planning; (*g*) the Citizens Coordinating Committee of Fairbanks, Alaska; (*h*) the American Red Cross, especially to Mr. Donald W. Stout, manager, western area, and Mr. J. White Guyn; (*i*) Mr. Elmer Gagnon, Federal housing administrator, Federal Housing Administration, Alaska; and (*j*) Mr. William Niemi, administrator of Federal highways, Alaska.



On the left is Mr. Clinton W. Phillips, mechanical engineer, Bureau of Standards. On Senator Gruening's right is Mr. William C. Cullen, materials technologist of the Bureau. The moisture experts from Washington, D.C., advised central Alaskan homeowners and businessmen on practical and conservative methods of drying out buildings.

LETTER OF PRESIDENT JOHNSON DECLARING DISASTER AREA

THE WHITE HOUSE,
Washington, August 17, 1967.

Hon. FARRIS BRYANT,
Director, Office of Emergency Planning,
Washington, D.C.

DEAR GOVERNOR BRYANT: I have determined that the damage in the various areas of the State of Alaska, adversely affected by severe storms and floods beginning on or about August 12, 1967, is of sufficient severity and magnitude to warrant a major disaster declaration under Public Law 81–875.

In order to effect Federal assistance, you are hereby authorized to allocate $1 million, plus 3 percent for administrative expenses, from funds available for such purposes.

Sincerely,

LYNDON B. JOHNSON.

LETTER OF THE OFFICE OF EMERGENCY PLANNING (RE DISASTER ASSISTANCE FOR ALASKA)

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF EMERGENCY PLANNING,
OFFICE OF THE DIRECTOR,
Washington, D.C., August 17, 1967.

Hon. ERNEST GRUENING,
U.S. Senate,
Washington, D.C.

DEAR SENATOR GRUENING: On August 17, the President declared a major disaster for Alaska because of storm and flood damages. He allocated $1 million in Federal funds for emergency relief and restorative work.

The declaration of a "major disaster" under the Federal Disaster Act, Public Law 81–875, permits Federal assistance to the State and to the affected political subdivisions for debris clearance; protective, health, and sanitation measures; and the emergency repair of essential public facilities.

Gov. Walter J. Hickel, of Alaska, asked Federal aid under Public Law 875 for the city of Fairbanks and adjacent area, and I have designated this area eligible for assistance. This listing will be published in the Federal Register.

Our Office of Emergency Planning Region 8 office located in Everett, Wash., will administer this program in Alaska. A temporary field office is being established in Fairbanks. Meetings will be held at various points throughout the disaster area to explain to State and local applicants what aid is available and how to apply for assistance. These meetings will be well publicized locally so that elected officials and the public may attend.

Please be assured that we intend to do everything possible to provide prompt and efficient disaster assistance. If you have any questions concerning this program or its implementation in your State, I suggest that you contact Mr. Gordon Gillis (code 103, extension 3170), our congressional liaison officer.

Sincerely,

ROBERT Y. PHILLIPS
(For Farris Bryant, Director).

PRESS RELEASE OF THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

August 25, 1967.

Flood Stricken Fairbanks Will Get HUD Help

Secretary Robert C. Weaver, U.S. Department of Housing and Urban Development, today announced approval of $102,000 in planning funds to help the State of Alaska survey damage to the Fairbanks area caused by the recent flood and to plan a rehabilitation program.

The funds, made available by amendment to a statewide urban planning assistance project approved earlier by HUD, will finance the activities of 94 two-man survey teams which start work this weekend (August 26–27). Project activities, estimated to cost $136,000 including local supplementary funds, will be coordinated through the Office of the Governor of Alaska.

Said Secretary Weaver, "With the Alaska winter no more than 5 weeks away, it is vital that the State find out rapidly the exact nature and extent of the damage and the most pressing needs of area residents. That's where HUD will help."

The so-called 701 program of urban planning assistance was selected as the channel of HUD aid rather than the urban renewal program which was used to provide help after the 1964 Alaska earthquake. Urban renewal requires delineation of a specific project area and the Fairbanks flood damage zone is difficult to define, as floodwaters are still receding. The affected area includes all of Fairbanks, with the exception of high ground near the university, and extends almost to the Yukon River.

The survey teams will determine damage to private property, prepare projections of loss of income and revenue to State and local governments, inventory the available manpower, and set up a survey of emergency shelter needs and available housing.

Secretary Weaver has named Don Hummel, Assistant Secretary for Renewal and Housing Assistance as HUD's coordinator for Alaska flood relief. The Secretary said that a survey has been made of available mobile homes in Alaska and on the west coast. "As soon as we are informed of how many such homes are needed, we will make arrangements to lease them and furnish them to residents of Fairbanks," he explained.

While the flood's immediate effects were apparent in the Fairbanks area, the disaster has had a statewide impact. The city of Fairbanks, now almost completely destroyed, is envisioned as the springboard for long-range economic development of the northern half of the State of Alaska.

Local officials pointed out that while the 1964 earthquake left behind the tools for rebuilding the damaged areas, the now receding floodwaters left all electrically operated machinery and much other needed equipment beyond salvage.

Said Secretary Weaver: "The courageous people of Alaska have received yet another assault by the forces of nature. The resources of this Department stand ready to help them as they plan their recovery."

SURVEY REPORT OF THE AMERICAN NATIONAL RED CROSS

THE AMERICAN NATIONAL RED CROSS,
Washington, D.C., August 22, 1967.

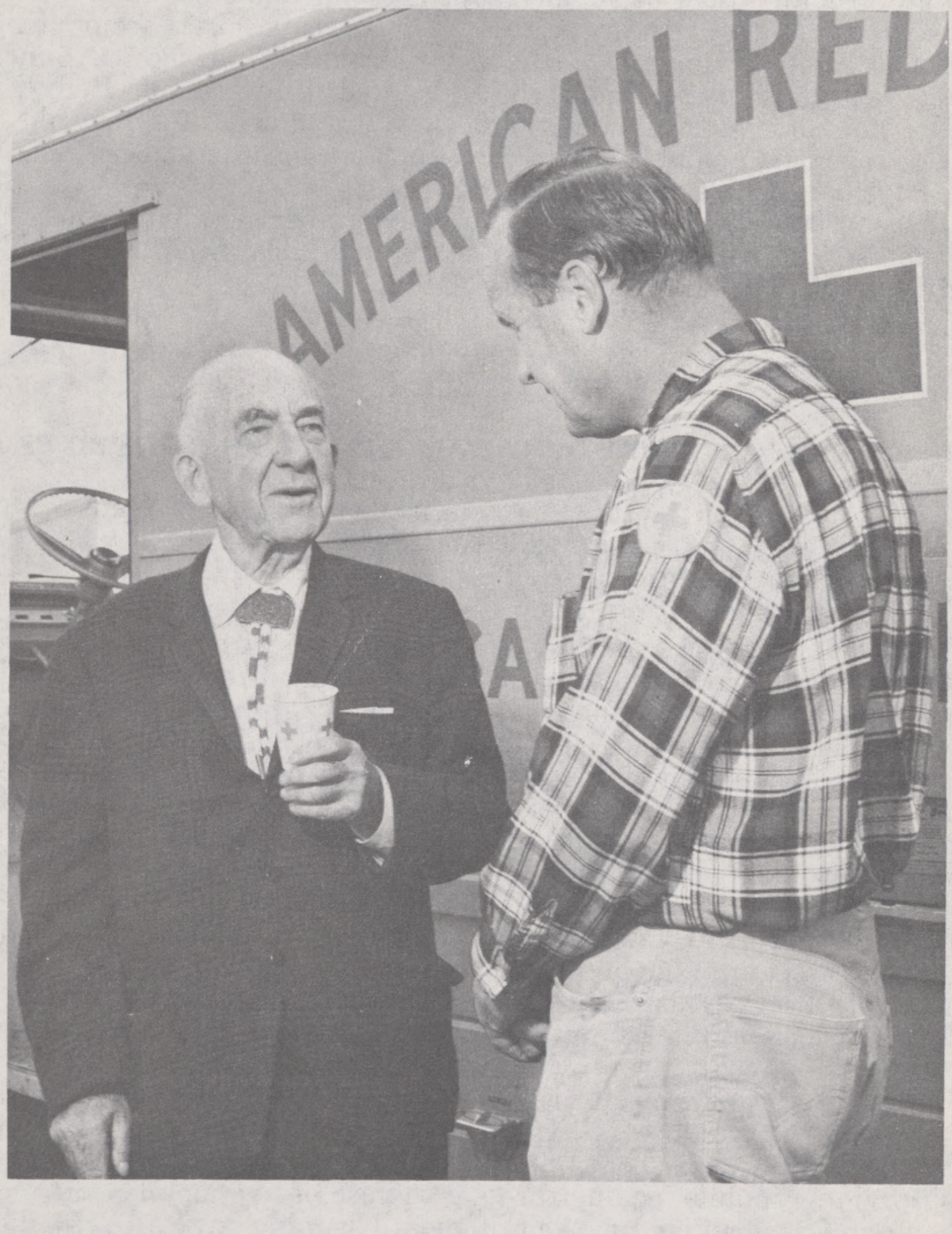
Hon. ERNEST GRUENING,
U.S. Senate,
Washington, D.C.

DEAR SENATOR GRUENING: As the American Red Cross steps up its flood relief activities in and around Fairbanks, we want to give you a report on help given to date and on such plans for future assistance as can be determined at this stage of our relief operations. We will plan to report to you twice weekly so that you will be kept currently informed as to Red Cross disaster relief efforts in your State.

Red Cross relief operations were initiated even before Fairbanks was hit by severe flooding during the weekend of August 12. The Red Cross disaster relief coordinator for Alaska came to Fairbanks to assist with the sheltering of 150 evacuees from Nenana, who had been forced from their homes by earlier flooding. When the Chena rose in Fairbanks, he worked with volunteers from the Fairbanks chapter to assist in the sheltering and feeding approximately 15,000 Fairbanks residents. At the height of the emergency, there were evacuees in 13 locations in and around the city, the largest numbers, 6,000 at the University of Alaska, and 2,700 at the Stanhope School. Volunteer Red Cross nurses were on duty at each shelter.

During the next few days, as the shelters continued to operate, the Red Cross also worked with city officials to get food to people stranded in their homes. At the same time, approximately 3,000 people have been evacuated to Anchorage, where those who need shelter are being housed and fed by the Red Cross at Camp Carroll. In giving assistance, the Red Cross has utilized cots and blankets provided by the U.S. Public Health Service and surplus commodities provided by the Department of Agriculture. Such material aid is given to Red Cross under longstanding working agreements with those Federal agencies. The Air Force is flying in Red Cross supplies from Elmendorf Air Force Base in Anchorage.

As of this date, 60 Red Cross disaster workers have flown to Alaska to assist in relief operations. They are headed by Donald Stout, manager of the western area office, American Red Cross, and Richard Gordon, director of disaster services for that office. The group includes nurses, mass care specialists, building advisers, and supply specialists. Casework personnel is also being recruited and many are already en route. It is anticipated that the number will reach 100 this week as we build up a staff to assist the families in recovering from the flood and get back to normal living. Every effort will be made to provide this assistance as swiftly as possible, so that, depending upon the restoration of public utilities, sewer and water lines, as many Fairbanks families as possible can return to their homes before the winter freeze begins.


AMERICAN RED

You will be interested in knowing that the Red Cross staff is living under circumstances comparable to those of the people they have come to help, in a school building, and is using helicopters and boats to get around where other means of travel are not possible.

Red Cross chapters are accepting welfare inquiries from anxious families concerned about people in Fairbanks and the surrounding villages. Such messages are being routed through the Red Cross office at Elmendorf, from where they are flown to Fairbanks for followthrough. To date, hundreds of such inquiries have been initiated through Red Cross channels.

As specific survey figures as to the number of homes and small businesses destroyed or damaged are available from our building advisers, we will share them with you.

Sincerely,

ROBERT F. SHEA, *Vice President.*

SUPPLEMENTAL REPORT OF THE AMERICAN NATIONAL RED CROSS

THE AMERICAN NATIONAL RED CROSS,
Washington, D.C., August 28, 1967.

Hon. ERNEST GRUENING,
U.S. Senate, Washington, D.C.

DEAR SENATOR GRUENING: As a result of a resurvey over the weekend, the Red Cross building advisers report the following revised statistics on the flood damage: Dead, 7; ill or injured, 75; hospitalized, 40; dwellings destroyed, 40; dwellings with major damage, 3,291; dwellings with minor damage, 773; apartment units damaged, 552; mobile homes (trailers) damaged, 200; farm buildings destroyed or damaged, 72; small businesses destroyed or damaged, 311. The number of families suffering major losses of real or personal property as a result of the flooding totals 5,200.

As of Friday, August 25, 1,000 families have applied for long-term recovery assistance including rebuilding or repair of homes, replacement of essential household furnishings, temporary maintenance, clothing, occupational supplies and equipment, and for medical and nursing assistance.

Over 100 disaster specialists are on the scene to assist the local Red Cross chapter volunteers. Approximately 1,200 people remained in shelters. Red Cross is continuing to feed and shelter occupants as well as providing mobile feeding through the use of five mobile canteens to the families cleaning up their homes. Cleaning kits are also being provided.

A total of 166 gas-fired, infra-red, portable heating units were shipped to Fairbanks to assist in drying out the houses.

Over $250,000 has been spent primarily in emergency relief activities to date.

As additional information is received, we shall continue to share it with you.

Sincerely,

ROBERT F. SHEA, *Vice President.*

LETTER OF THE DEPARTMENT OF TRANSPORTATION CONTAINING ALASKA RAILROAD REPORT

THE SECRETARY OF TRANSPORTATION,
Washington, D.C., August 17, 1967.

Hon. ERNEST GRUENING,
U.S. Senate, Washington, D.C.

DEAR SENATOR GRUENING: I have been following with both interest and apprehension the stories of the disastrous floods at Fairbanks and at Nenana. The extent of the disaster to both has been brought close to home by on-the-spot reports from John Manley, Alaska Railroad General Manager. I note that high water at Nenana has interrupted freight and passenger service between Anchorage and Fairbanks and am hopeful that, with floodwaters now receding, track and roadway can be quickly repaired and normal rail service restored.

In this connection, I thought you would be interested in having for your files a copy of Mr. Manley's latest report as relayed to me through his assistant in Washington.

Sincerely,

ALAN S. BOYD.

STATUS REPORT OF THE ALASKA RAILROAD

AUGUST 17, 1967.

To: Secretary of Transportation.
From: Assistant to the General Manager, the Alaska Railroad.
Subiect: Alaska Railroad flood report.

I talked to General Manager Manley by phone from Anchorage at 3:30 p.m., Washington time (9:30 a.m., Anchorage time), on Wednesday, August 16. The General Manager had iust returned by plane from an inspection trip of flood damage at Fairbanks and at Nenana (a town of 350, about 60 miles south of Fairbanks where the railroad crosses the Tanana River and where the latter is ioined by the Nenana River).

Worse than the earthquake

For Fairbanks, the flood has been a tremendous disaster. The Chena River has flooded all but the highest ground for the entire city of nearly 40,000 people. Because almost every residence and business building has been sevérely damaged, the flood has affected Fairbanks more seriously than the 1964 earthquake affected Anchorage. During the earthquake, and in spite of the enormous destruction it caused, the vast maiority of the homes in Anchorage escaped damage because they were not in slide areas. The quake itself broke dishes and windows outside slide areas, but left homes and business buildings intact. In Fairbanks, inspection by air disclosed a vast lake with water to the second stories of many homes, a few fires that were burning themselves out because firemen could not get to them, and people still waiting on rooftops for rescue.

More than 12,000 Fairbanks citizens have been evacuated—6,000 to the high plateau of the University of Alaska above College Station, 3,000 to a Fairbanks high school, and the rest to miscellaneous buildings on high ground within the city. The Alaska Railroad used its passenger equipment to shuttle refugees from Fairbanks to College Station (a distance of about 3 miles) until a house, floating down the Noyas Slough (River) lodged against the Railroad bridge over the river and caused a small portion of the Railroad grade to wash out. This will be quickly repaired as the water recedes. The highway can be repaired equally quickly, however, and resumption of the Railroad's passenger shuttle service will probably not be necessary.

The Alaska Railroad's yards are flooded, but apparently have not been seriously damaged. There is a possibility of a good deal of water damage to railroad equipment on the ground at Fairbanks. Water in the railroad station at Fairbanks rose about 6 inches above the floor. In general, however, the Railroad is comparatively free of track, roadway, and bridge damage for the 60 miles between Fairbanks and Nenana.

Fairbanks needs massive assistance

Mr. Manley's report on Fairbanks emphasized the enormous damage which the flood had caused. He said that, unless there was a huge influx of Federal help, Fairbanks would go "belly up." Fairbanks will be declared a disaster area and the needed help will undoubtedly be forthcoming. But it is only about 6 weeks to the beginning of winter in Fairbanks and much must be done within a relatively few days.

Contrary to the newspapers, Mr. Manley reported that electric power was still available in Fairbanks. If the power should fail, the Railroad could help with some emergency power from small generators. Through the Railroad and the Alaska Steamship Co., it is probable that some emergency refrigeration could be supplied through the use of railroad shipping containers (24 feet, 20-ton capacity) that are equipped with heater and refrigeration units.

The Alaska Railroad can perform its greatest service to Fairbanks by getting back into freight and passenger operations as rapidly as possible. Here, the bottleneck is Nenana on the Tanana River. Nenana is worse hit than Fairbanks. Its population of 350 has been evacuated. There is no electric power. Water rose to 6 feet above the top of the rails at the point of greatest water depth. Since our tracks are on grade this means much deeper floodwater in most of Nenana. Water in the railroad station at Nenana reached a height of 3 feet or more above floor level.

The General Manager is working with the military in Anchorage to ship one large generator, or several small ones to Nenana to provide emergency power until powerplant service can be restored.

The Railroad has work trains on each side of Nenana, loaded with rock and gravel, and ready to move in as fast as the water recedes. The full extent of damage to track and roadway for about 3 or 4 miles at Nenana cannot be precisely known until the Tanana and Nenana Rivers are back to more normal levels. The General Manager estimates, however, that train service can be restored within 24 to 36 hours after maintenance of way and bridge and building crews start repair operations.

Floodwaters are receding

Floodwaters at Fairbanks had begun to recede about noon (Washington, D.C., time) on Wednesday, August 16. There has been fear of more rain but apparently this danger is lessening. Floodwaters crest at Nenana about 8 hours after cresting at Fairbanks. The floods at Nenana and Fairbanks are the more remarkable because this is an area of sparse rain and snowfall. Total precipitation at both places averages only 10 to 11 inches per year. This means that over half of the year's average rainfall came in less than 1 week's time.

Federal aids

On Wednesday afternoon, August 16, I attended a meeting in the New Senate Office building in regard to the Fairbanks flood. The meeting was chaired by the former Governor of Florida, Director Bryant, of the Office of Emergency Planning. Senators Bartlett and Gruening and Congressman Pollock were very actively present. It is estimated that about 50 people were in attendance. Reports on the flood were presented by Robert Shea, vice president of the American Red Cross; Gen. H. G. Woodbury, of the U.S. Corps of Engineers; Col. Edwin Sayre, representing the Joint Chief of Staff; Col. Edward Daniels of the Department of Defense; Alec Olson, Assistant to the Secretary of Agriculture in charge of defense mobilization; Clarence Cowles, Director, Disaster Loan Program, the Small Business Administration; and E. M. Fitch, Assistant to the General Manager of the Alaska Railroad.

Senators Bartlett and Gruening and Representative Pollock stressed the tremendous needs of Fairbanks, while members of the various military and civilian agencies present outlined the help that had already been given and the various ways in which additional help could be provided. With their traditional promptness, military agencies in Alaska have already furnished a vast amount of assistance in evacuating refugees and by flying in emergency medical and food supplies.

Governor Hickel, of Alaska, has formally requested that the President declare the flooded northern portions of the rail belt a disaster area. It is highly probable that President Johnson will have responded affirmatively to this request before this memorandum reaches you.

EDWIN M. FITCH.

SUPPLEMENTAL REPORT OF THE ALASKA RAILROAD TO A. S. LANG, FEDERAL RAILROAD ADMINISTRATOR

AUGUST 22, 1967.

FAIRBANKS AND NENANA FLOOD

Mr. Manley called me about 3 p.m., Washington time, on Monday, August 21, with a report on the Fairbanks and Nenana floods. He had just returned from an inspection trip to both areas. The track and roadway between Fairbanks and Nenana needed little work and are in good shape for the resumption of train service. Major damage has been caused in Fairbanks to the utility tunnels which carry Alaska Railroad heating lines, electrical wiring, etc. The tunnels have been pumped out as the Chena River high water has receded. Electrical

wiring will have to be pulled out and maintenance forces, after initial rehabilitation of the equipment and facilities in the utilidor tunnels, will probably be working all winter to get them back to high-standard operating condition.

The friction bearings on the wheels of many cars in Fairbanks suffered water damage and the packing will have to be replaced. Damage to roller bearings was probably more serious and some of the roller-bearing trucks may have to be sent to Anchorage for repair.

Nenana has been the bottleneck as far as train service through to Fairbanks is concerned. Yesterday the water on track and roadway was down to 3 feet at the deepest. With good luck the first train through Nenana to Fairbanks may go through on Wednesday, August 23. This depends on the rate the Nenana flood recedes. It should be borne in mind that the floodwaters of the Chena River at Fairbanks reach Nenana via the Tanana River about 8 to 12 hours later. Work trains, with loaded gravel and rock have been standing by on both sides of Nenana, and the track and roadway will be ready for the resumption of train service with 24 hours after the water goes down sufficiently so the track can be seen.

The railroad's branch to Eielson Air Force Base (26 miles) will be back in operation by August 24 or 25.

EDWIN M. FITCH,
Assistant to the General Manager.

PRESS RELEASE OF THE SMALL BUSINESS ADMINISTRATION, CORRESPONDENCE WITH SBA, NEWS STORIES AND EDITORIAL COMMENTING ON SBA POLICY

(Immediate release, Thursday, August 17, 1967)

SBA No. 1901.
(202) 382–1891.

Responding to President Johnson's disaster declaration for Fairbanks and Nenana, Alaska, the Small Business Administration announced today that it is prepared to begin making loans for repair and rehabilitation as soon as the floodwaters subside.

SBA Administrator Robert C. Moot said that the agency's disaster loan office has been in close touch with officials in Fairbanks and that SBA representatives are on the scene, operating from temporary offices at the Nugget Inn.

"SBA's Pacific coast area administrator, William S. Schumacher, from the San Francisco office, is in full charge of the disaster operations," Moot said.

"Arrangements have been completed to send a trained cadre of disaster loan specialists into the field as soon as necessary office accommodations are available."

Moot said that a "circuit rider" service would be established to help disaster victims in the town of Nenana. He said that SBA representatives would be sent there on a regular basis as long as necessary to help with loan applications.

"In addition to the SBA officials now on hand and those that have been alerted to go to Fairbanks, SBA has alerted still other disaster loan specialists to be prepared to leave on short notice," Moot said.

The SBA Administrator said that his agency is giving full cooperation to other Government agencies and to the Red Cross in order to bring help to the flood victims as quickly as possible.

He said that SBA has adequate funds to finance restoration, but that no estimates can be made of the total need until the floods have subsided.

Moot emphasized that SBA loans, at 3 percent interest, will be available to owners of businesses, homes, churches, charitable institutions, private schools, colleges and universities, and to individuals who have suffered personal property losses; to replace business inventory or equipment, household furnishings, and other privately owned property. These loans are limited to tangible losses.

In addition, SBA can make working capital loans to small businesses to meet their normal business expenses during this critical period.

"The purpose of SBA's loans is to put people back in their homes and get businesses back into operation again as quickly as possible," Moot concluded.

WASHINGTON, D.C., *August 22, 1967.*

ROBERT C. MOOT,
Administrator, Small Business Administration.

You are, of course, aware of the heavy damage which has been inflicted on residences in the Fairbanks, Alaska, area because of flooding of the Chena and Tanana Rivers last week. Receding waters disclose that virtually every house in the Fairbanks area has experienced damage, which Elmer Gagnon, director of the Federal Housing Administration for Alaska, estimates will amount to from $3,000 to $10,000 per home. Because of the President's designation of Fairbanks as a major disaster area, the Small Business Administration has all the authority it needs to lend money at 3-percent interest for a 30-year period to those needing assistance.

I am disturbed by a rumor that some SBA officials are recommending that loans be made only for the repair of damage and that the householder be given the SBA money for this purpose on a second-mortgage basis. Almost without exception Fairbanks homeowners are already saddled with monthly FHA payments which are at the limit of their ability to meet.

It is my urgent recommendation that SBA lend sufficient money to the owner of every damaged home to retire the existing FHA-insured mortgage and also make the repairs for damage inflicted by the flood. In this way homeowners would have only one mortgage payment to meet monthly over the next 30 years.

The alternative would be certain to bankrupt numerous Fairbanksans who could not afford to make two substantial mortgage payments each month to separate agencies. This would intensify the entire disaster. It should be recognized that everyone has lost heavily through damage to personal possessions, automobiles, and the like, which are not covered by home mortgages. They have also suffered loss of employment, which is certain to continue in most cases until next spring. In the face of all these circumstances, I feel it is the duty of the Government in general, and the SBA in particular, to come forward with the most generous terms permissible by law.

ERNEST GRUENING,
U.S. Senator.

FAIRBANKS, ALASKA,
August 30, 1967.

ROBERT C. MOOT,
Administrator, Small Business Administration,

Present SBA refinancing policies to meet Fairbanks area flood disaster are not working and will not work. A far more generous policy is essential to obviate a major economic disaster to countless individuals and to the entire community. Please refer to my previous telegram to you urging total refinancing of existing obligations of SBA disaster loan interest rates. If this is not acceptable, the following alternative should be given immediate consideration and action:

(1) Partial refinancing and reduction of existing loans; (2) economic injury loans to homeowners allowing loans for future mortgage payments on existing mortgages; (3) participation in refinancing by financial institutions; (4) recasting of existing loans together with partial refinancing thereof, plus additional amount for repairs, rehabilitation, and replacement, with total payment not to exceed

current monthly payments prior to disaster. The real difficulty of the new policy guideline which you handed down to SBA officials administering your program here is that only undue hardship serve as a criterion for permitting refinancing. Unless policies are modified, many houses will be returned to the government and financial institutions with yet larger resulting loss to the government.

This telegram is not a criticism of the local SBA which is trying to do a good job. Immediate action is essential because of imminent September freeze-up. This telegram represents not only my personal views but consensus of representatives of Government, business, banking, and homeowners at a joint meeting here today.

ERNEST GRUENING,
U.S. Senator.

[From the Anchorage Daily News, Aug. 31, 1967]

SBA POLICY 'WON'T WORK'

Official concern was mounting today that the Small Business Administriation (SBA) would not prove flexible enough to prevent widespread financial hardship in the recently-flooded Fairbanks area.

The State administration had been counting on the SBA to finance a major portion of the private loss.

U.S. Senator Ernest Gruening last night told SBA Administrator W. A. Moot by wire that current SBA financing policies to meet the flood loss requirements "are not working and will not work."

His action came hours after Gov. Walter J. Hickel sent a similar wire to the SBA in Washington urging a revision in SBA guidelines.

Apparently the SBA has established a policy regarding the Fairbanks flood relief loans that permits mortgage refinancing only in cases of "undue hardship."

SBA refinancing would provide the homeowner with a 30 year loan at 3 percent interest.

Unless the "undue hardship" policy is modified to include more homeowners whose property suffered extensive damage, Gruening said, "many houses will be returned to government and financial institutions . . ."

Gruening said the most acceptable solution would be total refinancing of existing obligations at SBA disaster loan rates.

"If this is not acceptable the following alternatives should be given immediate consideration and action," Gruening said.

"1. Partial refinancing and reduction of existing loans.

"2. Economic injury loans to homeowners allowing loans for future mortgage payments on existing mortgages.

"3. Participation on refinancing by financial institutions.

"4. Recasting of existing loans together with partial refinancing thereof, plus additional amounts for repairs, rehabilitation and replacement with total payment not to exceed current monthly payments prior to disaster."

Gruening said that his wire expressed both his own views and those of business and banking interests and homeowners who met yesterday in Fairbanks.

Earlier, Hickel was quoted as asking that the entire flood-stricken region be declared a hardship area to become eligible for the easier loan terms.

"The attitude of some homeowners, facing a really difficult economic situation, is definitely deteriorating," Hickel said.

[Editorial From the Anchorage Daily Times, Sept. 1, 1967]

To Turn the Tide

Those are grave words we're hearing these days from the governor and our senators about the recovery situation in Fairbanks.

They point up the need for much more effective action on the part of the federal government to speed the recovery effort in the flood-ravaged areas of Fairbanks and the Tanana Valley.

The concern being expressed involves the private sector of the economy—the nuts and bolts business of how the little guy who suffered huge personal loss is going to pick himself up from the mud of the Chena River overflow.

The problem is very real, and is vividly reported by Bob Miller, the Times staff writer who was the first newsman from outside Fairbanks on the scene when the flood waters began to rise and who still is assigned to report the vital recovery efforts under way in our neighboring city to the north.

In a report Thursday, Miller told of the problem of a homeowner with a $6,000 equity in his house and who now faces the necessity of borrowing perhaps $8,000 to repair the flood damage and replace furniture and other possessions that were ruined.

What does this fellow do?

Under existing policies of the Small Business Administration, such a homeowner can obtain a disaster loan to repair the damage to his house and to replace lost personal possessions.

But this loan goes on top of his existing mortgage, and perhaps on top of existing time payments he may have on other purchases lost in the flood.

And the burden of the new payments on top of other payments obviously is more than many people can bear.

Clearly more help than this is necessary.

Senator Ernest Gruening, after meetings with both Fairbanks officials and private citizens, has told SBA leaders in Washington that the existing restrictive policies will not and cannot solve the need.

Gov. Walter J. Hickel and Senator E. L. Bartlett have added their voices to the plea that additional help be extended.

What is needed, and certainly what is possible under existing law, are loans that will provide meaningful help to private citizens.

This means that persons who have suffered such heavy losses—and virtually every resident of Fairbanks was hard hit by the disaster—should be permitted to refinance completely under disaster provisions of the SBA act.

This was done after the earthquake in Southcentral Alaska, and played a significant part in the rapid recovery of this area. Fairbanks, which was crippled equally as much, deserves no less.

SMALL BUSINESS ADMINISTRATION,
OFFICE OF THE ADMINISTRATOR,
Washington, D.C., September 1, 1967.

Hon. ERNEST GRUENING,
U.S. Senate,
Washington, D.C.

DEAR SENATOR GRUENING: In your telegram of August 30, 1967, you indicate policies which you consider essential for the rehabilitation of the flood disaster victims in the Fairbanks, Alaska, area.

Your suggestions are receiving careful consideration. As your office has been advised by telephone, Mr. Cowles, Director of our Office of Disaster Loans, will arrive in Fairbanks on Monday morning, September 4, to attend a meeting which, we understand, is to be held sometime Monday afternoon for a complete review of the Fairbanks situation.

Subsequent to Mr. Cowles' return from Fairbanks and a further review of the situation at that time, we will again be in touch.

Sincerely yours,

ROBERT C. MOOT, *Administrator.*

[From the Fairbanks Daily News-Miner, Sept. 12, 1967]

SBA CHIEF PREDICTS LOANS WILL GO OVER $30 MILLION

William Schumacher, western regional director for Small Business Administration, predicts the SBA loan program in the Tanana Valley flood disaster area will exceed $30 million.

"I would not be surprised if it went as high as $50 million," he adds. Schumacher is visiting the Fairbanks SBA operation from his headquarters in San Francisco.

Approved loans by the end of last week exceeded $20 million, Schumacher said. It was reported Monday that approved loans totaled $2.9 million; that was an incomplete figure.

Of the $20 million plus, Schumacher said $8,275,000 had been approved as home repair loans, $10,793,000 for business loans, and $1,290,000 for economic injury loans for business establishments.

In that latter category, 17 businesses had applied and been accepted. More similar applications are being reviewed and processed now.

Home loans by close of business Saturday totaled 668; business loans numbered 192.

The SBA official said disaster loans can be made for loss of personal property, real property (structures), inventories in businesses and for economic injury. In the economic injury category consideration is given to loss of business during the aftermath or the actual loss of business caused by closure for periods during the disaster.

In the scant three weeks the SBA offices have operated here approximately one-third of applicants loans have been approved.

For SBA this is an amazingly fast operation, Schumacher said.

He has high praise for Alaska SBA director Robert Butler and branch manager Homer Davies and the speed in which they are meeting the financial problems of the loan applicants.

"This is the most fantastic operation I've seen after a disaster," Schumacher said.

SBA offices are located in the unheated Chena Building where desks and other office equipment for the 100 people manning the facility crowd the first and second floors.

Monday morning jack hammers were tearing up the sidewalk in front of the building. There were similar noises coming from the rear of the downtown building.

In the midst of the noise and hurried processing two people were trying to use the same telephone, the only one in the establishment.

Schumacher shakes his head in disbelief at the way the SBA force has managed to expedite the normally slow process of financing. He recalled his first visit during the height of the flood when he and Butler walked in hip boots in water searching for adequate space to set up offices. At that time there were no personnel in town, no desks, no typewriters.

He said he expects approximately 3,000 loans for rebuilding and rehabilitation. This will require setting up a branch office in Fairbanks, Schumacher said.

Schumacher said he will keep a large force of SBA agents in Fairbanks as long as there is a need.

"As the work load will permit, we will phase out some of the personnel," he said.

Of the 100 employed now by SBA in Fairbanks, 20 are local people working as appraisers of loan reviewers.

NEWS STORIES AND EDITORIAL ABOUT FLOOD

[From the Anchorage Daily News, Sept. 12, 1967]

Flood Damage Detailed

Juneau, Sept. 11 (AP)—The Department of Administration gave a detailed breakdown today on damage suffered by private buildings and trailer homes during the mid-August floods in the Tanana Valley.

The breakdown showed total damage to non-public buildings amounted to $29,114,251, including $20,230,825 in Fairbanks alone.

North Pole suffered $118,520 in damage to private buildings, Chatanika $29,896, Nenana $425,153 and other areas in the flood area, excluding Minto and Manley Hot Springs, $11,416.

Residential buildings in Fairbanks suffered damage amounting to $15,821,342, commercial buildings $3,967,010, tax-exempt buildings $169,579, trailer homes $32,143 and unclassified buildings $240,751.

The totals for the flood area as a whole, excluding Minto and Manley Hot Springs, in the same order, were $23,357,743, $5,025,652. $201,758, $110,687 and $418,410.

The totals for the North Star Borough, in the same order, were $23,046,337, $4,949,994, $179,503, $92,238 and $409,610.

In Nenana, damage, again in the same order, was $304,150, $71,499, $22,255, $18,449 and $8,800.

Damage in North Pole consisted of $115,912 to residential buildings, $2,117 to commercial buildings and $491 to unclassified buildings.

In Chatanika there was $28,218 in damage to residential buildings and $1,678 in damage to trailer homes. Damage in other areas, excluding Manley and Minto, amounted to $7,256 to residential buildings and $4,160 to commerical buildings.

The department said 5,240 buildings in the flood area, excluding Manley and Minto, were flooded.

Of these, 980 had water in the basement only. A total of 523 had water up to one inch deep on the first finished floor, 1,560 had water one to 12 inches on the first finished floor and 2,177 had water over 12 inches deep on the first finished floor.

In a survey of damage to heating systems in private buildings in the flood area, the department said water covered burners in 535 buildings and covered heating controls in 3,995 buildings.

The comparable figures for Fairbanks were 319 and 2,535.

[From Horizons, Sept. 4, 1967]

FAIRBANKS FLOOD DAMAGE LEAVES 15,000 HOMELESS

LOSS REACHES $250 MILLION

(By George T. Fay)

FAIRBANKS—From the air, this city of 30,000 had a Venice-like appearance. Motorboats plied nine-foot deep canals made by the rampaging Chena River's overflow, providing the only means of surface transportation, as mid-August floodwaters lapped at second-story windows of the state's second largest city.

Half the city's population were homeless and a $250 million damage tab was rung up. Rebuilding should take a year's time, but it must be done in only six weeks, with the aid of a hastily allocated million dollars of federal funds—and traditional Alaskan grit.

If not completed by fall's first freeze, the city will be a mammoth ice patch.

The International Airport on the west edge of the city, and Eielson Air Force Base 28 miles to the southeast, looked like giant aircraft carriers moored in a vast lake. Their two-mile long "flight decks" barely protruded from the waters. During the flood's worst period, these runways were the only means of bringing food, drinking water, fuel, medical supplies and other items sorely needed by the disaster struck community.

AIRCRAFT BOB LIKE CORKS

Aircraft of every description jostled each other for parking space on the flood-shortened ramp in front of the International Airport terminal building. Fifty less fortunate aircraft bobbed like corks in the water which covered their tie-down area.

The traffic pattern swarmed with commercial, military, and private aircraft, each on its appointed disaster mission. Helicopters lighted like giant flies on rooftops of buildings, or hovered over areas while winches lowered lines to disaster victims trapped on rooftops.

Fairbanks tower chief Fayette Harder, and three air traffic control specialists, Robert Bloom, Clifford Westbrook, and Clyde Wenger, worked 18-hour shifts the first two days.

"Aside from directing traffic, we had to handle all sorts of messages on our VHF emergency frequency 121.5 mc, since all teletype and telephone lines were out of commission," recalls Bloom.

He hardly had time to reflect on the damage to his home. Flood waters reached the five-foot level in the living room of his six-year old ranch-type home. His wife, Janet, and his three boys made their way to safe haven at Lathrop High School.

EMPLOYEES OUT OF TOUCH

Communication was the biggest problem confronting Darrell Nelson, area manager. With all commercial power out of commission, Nelson was virtually out of touch with employees in his area. Single-side band radio communication between the International Airport tower and the Eielson RAPCON was his only link within the city and the outside. Fairbanks Center at Fort Wainwright, the low frequency range, and the Fox radio beacon were flooded out of commission. Center operations were shunted to Anchorage Center, while the Eielson RAPCON handled all IFR traffic within 40 miles.

To watch Joe Husa at work, one would never guess that his family lost home, furniture, clothing, and other material possessions. Husa, airway facilities chief, knew there was work to be done getting navaids and communications back on the line. Like countless others who put aside thoughts of personal things, he discovered that work of recovery enabled him to forget his losses.

PERSONAL LOSS SHOVED ASIDE

Because 95 percent of the homes in Fairbanks were flooded, Darrell Nelson set in motion an emergency evacuation of FAA dependents. Flight Standards aircraft flew daily missions, bringing in pumps, generators, fuel, clothing, and other material from Anchorage to Fairbanks. On their return flight, they carried families to the safety of Anchorage.

Local FAAers welcomed refugees into their homes with no thought of recompense.

"We could have handled five times the number of refugees," reflects Jerry Brumley, assistant area manager in Anchorage. "There was all kinds of 'people snatching' going on at our reception center at the airport. It seemed that everyone here wanted to take in a family," he adds.

"Those beautiful silver salmon are ruined," mourned Dorothy Evans on the flight to Anchorage. She and husband Nolan Evans (a controller at Fort Wainwright) had caught 57 "silvers" at Valdez the weekend before the flood and had placed them in their freezer. Evans was accompanying his family to Anchorage, where he went to work at a manual position at Anchorage Center to handle Fairbanks' heavy traffic during the emergency.

PAVEMENT BURSTS AROUND HOMES

"My lawn looked like a giant sprinkler system," said Lucille Waters, whose husband, Ralph, is a controller at Eielson RAPCON. "Great spouts rose into the air as water pressure burst holes in the pavement and lawn around our home." Mr. and Mrs. Waters, with their three children, made three moves to friends' homes that night before settling at Lathrop High.

"Just call me the 'Catastrophe Kid,' " mused Marilyn Besanceney, whose husband, Bob, is a controller, while waiting for her typhoid shot at the Anchorage hangar. A 15-year resident of Fairbanks, she had visited Anchorage on the eve of the Good Friday earthquake in 1964. "I can't wait to get back and clean up the mess. Fairbanks is where our home is, and that's where we belong."

Marilyn, Joe Husa, Bob Bloom—there isn't space to mention all of them—have that special *élan* outsiders always notice when coming into the region. Northland people pull together, and one is reminded of it anew during a disaster.

"There's a lot of work to be done in restoring full FAA services to aviation, and getting our people back into their homes before winter sets in," said Deputy Director John R. Kullman, Brigadier General, USAF. "We know that we've got the right people there to do the job."

"THERE MUST ALWAYS BE A FAIRBANKS * * *"

[Anchorage Daily Times, Flood Edition]

BIGGER AND BETTER AND STRONGER

The Flooding Chena Doesn't Alter City's Vital Role

(Editor's Note.—In the aftermath of the great flood which inundated Fairbanks, the spirit of the recovery was expressed in the following editorial which appeared in the Anchorage Daily Times Aug. 17. Its message reflects the purpose of this special section and the conviction that despite the great hardship inflicted by the floodwaters of the Chena River the people of Fairbanks will rebuild an even greater city. For Fairbanks this edition of the Times is dedicated, and the editoral is printed again.)

There will always be a Fairbanks.

A flood can hurt but it can never kill a city that is essential to so many people in such an important area.

Fairbanks is vital in the national defense program, in the state's educational program and in the nation's Arctic science projects. The flood brings no change in any of those three fields. The basic economic foundation of the city is still sound. The city must be restored quickly as the flood waters recede.

It is timely to discuss the permanence and stability of Fairbanks because of the horrid doubts and uncertainties that come with disasters Will the city be rebuilt? Will the way of life of the population be restored? Will there be a Fairbanks?

The same thoughts occurred and were discussed quite frankly among Anchorage residents during the days after the earthquake. Uncertainty prevailed for days before it was generally accepted that the city would be restored.

An analysis of the economy and the people of Fairbanks indicates that there is no question about the restoration of that city.

There will always be a Fairbanks.

The flood has caused havoc that is yet to be described, but it has made not even a dent on the need for national defense, Arctic research or education. Those three programs must continue and the money to support them is at hand.

This assures the hundreds of employes in wholesale, retail, and all the service establishments that their businesses and their jobs will be restored as quickly as it is possible to do so.

National defense, researchers and educators cannot operate in a vacuum. They must have the support of a civilian community such as

Fairbanks. Indeed, that is one of the basic reasons there is a Fairbanks and it is an assurance that there will always be a Fairbanks.

The requirements of all these workers assure others of employment in transportation, communications, professions and construction. Fairbanks supplies a vast area of Alaska—100 miles to the east, 300 miles to the west and 300 miles to the north. There must be fully operative transportation and communications agencies.

Each of the major categories of employment in Fairbanks must continue, with possible acceleration in growth but certainly no diminution. The one exception is that of construction, the category that must undergo a mushroom growth in order to restore the physical plant for the community under a crash program.

Fairbanks will blossom out bigger and better and stronger than over before.

Fairbanks enjoys a position of prominence, permanence and stability in the Alaska scheme of things.

Because of the nature of its economics it has one of the most stable economies of all the cities. There is no variation because of the whims of fish or the fluctuations of market prices for particular products. It continues from month to month and year to year with a charge marked mainly by healthy annual growth.

The University of Alaska showed in 1965 that there were 12,885 employes in the city. More than half of them had the stability and security that goes with government employment because they were in various federal, state or local government programs. The payrolls continue without interruption, even in disaster.

Our analysis of the university figures showed that out of 12,885 employed workers more than 11,000 of them were in categories of work that are still essential ot the basic purpose of Fairbanks.

When the water goes away there will be a period of surveys of the damage, followed by one of the biggest crash construction programs Alaska has ever seen. The city must be restored before the freezeup and that means haste.

Only with the restoration of Fairbanks can the national defense, Arctic research, and educational requirements be met.

There must always be a Fairbanks.

AN ON-THE-SCENE ACCOUNT OF THE FLOOD AND A REPORT OF ITS AFTERMATH

Mr. George Sundborg, administrative assistant to Senator Gruening, happened to be in Fairbanks at the time of the flood and wrote the following firsthand account of the disaster for his family and friends. Portions of his real life story appeared in the August 16, 1967, Anchorage Times and was the first personal experience report from the scene. Because it vividly typifies the valiant efforts by residents of the area to overcome what became an insurmountable catastrophe, Mr. Sundborg's article is printed here in full. It is followed by the August 25 followup article on the flood damage which Sundborg wrote for the Senator's newsletter.

ANCHORAGE, WEDNESDAY, *August 16*.

DEAR FAMILY AND OFFICE FRIENDS: The first warning I overlooked was the rain, the way it was coming down when I landed at the Fairbanks airport. For the first time it has ever happened to me in Alaska, the ground crew brought a bunch of umbrellas to the plane and we were invited to use them to get down the ramp and inside the terminal without drowning.

My son George told me it had been raining like that for three days. In one 20-hour period Fairbanks got more precipitation than it receives normally in the whole month of August. (July and August are the "rainy" months of the year up there, though it is really a very dry part of the world, with annual precipitation totaling about 10 inches).

We didn't think anything particular about the weather as it continued to rain all night Saturday and all day Sunday. It slackened up considerably Sunday. The forecast was for rain through Tuesday and George said it was raining hard all the way from Japan to Alaska.

Saturday night and again Sunday night we drove to look at the Chena River at the foot of the A–67 site. It was flowing along very fast and brown. We judged from its level on the fence which was built to keep gate crashers out of the Centennial Exposition that it had risen two feet in 24 hours. But we didn't think this meant anything to US. George's house in the Taku Subdivision had been built safely on high ground where no flood had ever reached.

When I went about my Monday morning business I drove across the Cushman Street Bridge. Close to here is where they have the tripod each winter and early spring for the Chena Ice Pool. There hasn't been very much water in the Chena in recent years since Ladd Field (later Ladd Air Force Base and now Fort Wainwright) was built. This has led to unspectacular breakups at Fairbanks, with the tripod often grounding and sitting for days on a sandbar before the rising spring waters would move it and stop the clock.

But on Monday there was plenty of waters in the Chena. It was within 18 inches of the big steel girders which support the roadbed

of this main crossing of the river. It was flowing very fast and silently. A crane stood on the bridge so logs which came bumping down the stream could be lifted across to the downstream side.

At 11 a.m. Monday my daughter-in-law Doris looked out the window in Jim's room on the upper level of her home and exclaimed "Why, the water is right down at the end of our street!"

So it was—where it didn't belong, a quarter of a mile from where a well behaved river should be. I was visiting my son's family.

I put on my raincoat and walked down to take a look. The water was quiet—not a ripple on it. But I could see it creep along our street. It was just part of a big lake stretching from below A–67.

Two hours later it had moved quietly a block closer, to within a block of the house, but it certainly didn't look like any kind of a menace.

George called to say that Island Homes, a subdivision right on the riverbank, was being evacuated. This had happened before in a city where floods were no novelty. Island Homes was known to be a low-lying area.

Talkeetna Avenue has a lot of nice houses on it. By this time two of them nearest the river had water in their basements. Neighbors were helping move valuables to upper floors.

About 4 p.m. the water was in the street right in front of our house. We were on one of the highest spots in the whole area. Now the water began to have some motion to it. It was flowing fast through culverts under driveways as it invaded new streets and blocks.

A few hours later my business brought me back across the Wendell Street Bridge. Logs, trees, oil drums, debris of all kinds were whizzing quietly by underneath. The street was closed at the Fairbanks end of the bridge and traffic was being detoured.

My son, George, came home in a loader.

For a man who can't do anything it is wonderful to have a son who can do everything. George whipped that loader around in a great muddy splurge of earth-moving roulette. In almost no time at all he had a dike three feet high pushed up all the way across the front of the house. He took off a section of fence and roared into the back yard where he tore up the carefully levelled ground into a similar barricade.

At one place around the side of the house there was a heavy wheelbarrow in the way. It was two-thirds full of rocks and plumb full of water. To get it out of the way of the loader I took off my shoes and socks, rolled my pants legs up to the knee and waded in.

From that time on I was committed. There were places in the dike to be filled in by hand shovel. The wet mud was heavy and hard to work.

The time for my return flight to Anchorage came and went. I kept shoveling. I had a big blister on my palm and later just a raw spot where a blister had been.

After throwing up a high bank of earth all around the house, George went over and did the same for the people next door. It looked as though our two houses at least would be safe from the steadily rising water.

There is another problem about a flood. To keep water out of a basement you need not only a wall outside but plugs in the plumbing inside.

The civil defense office had urged all residents of Westgate and Taku to plug up their drains. We whittled pegs which, covered with cloth for a seal, were driven into the floor drains. The toilet bowl is something else again. We stuffed it up with something taken from the rummage box.

All up and down the street people were working hard to try to save their houses or, failing that, possessions in their houses. The activity became fairly frantic.

We kept checking our dike and adding pats of mud where it seemed lowest. The kindly looking lake outside had now become a moving river. It moved faster and faster as it rose, but our earthwork was pretty massive and we thought we were going to cheat the Chena.

George rode off through the flood to return the loader. One of the children shouted something from within the house and when Doris and I rushed in to look we found water was bubbling up through a floor drain near the furnace we hadn't known was there. We plugged it.

Then the toilet bowl filled and we began bailing. Water also began to seep out around the foot of the bowl. We mopped it up and began a bucket battle which went on for two hours.

Some of the time we thought we were holding our own; then it was obvious the water was gaining on us.

The radio said the Polaris Building, the Northward Building and the Nordale Hotel had been evacuated. Water was five feet deep in Second Avenue. One radio station had gone off the air. The other was on emergency power from its transmitter site on the Farmers Loop Road. The University Avenue Bridge, the last land link with the University and north-of-the-river, was closed.

Meanwhile Doris was dressing the children and packing bags and belongings. She had had the foresight to make formula for the baby the previous afternoon.

The next door neighbors paddled over by kayak to ask if they could do anything. We said we might want to be shuttled to the big truck which stood floor-board-deep out in the invisible driveway. Doris doubted out loud that the five of us, with our meager baggage, could ride in the cab (it was a sort of tractor truck with no platform on back). George said we would do it somehow.

Just as we were ready to leave, there was a knock on the front door. It was a couple of rescuers in an aluminum boat. They had been moving people since 1 a.m. We gladly accepted evacuation by water in preference to trying to get to the truck and away on it.

George threw the main light switch. There had been power and water to the end. The telephones gave out during the evening. There had been no commercial communications with the rest of the world since afternoon.

Some of the details of daily living had become a little complicated—or maybe uncomplicated. As there was no way for the water to drain, washing was a problem; solved by just tossing the waste water out into the river. How does a person relieve himself when he can't flush a toilet? He'll find a way, even if he has to stand on the living room carpet and aim out the front door. Where do you put the garbage? Don't worry; it will go down the river along with everything else.

We were loaded in the boat about 7:45 a.m. We drifted past the neighbors' to leave them a basket of frozen and other food from the dead refrigerator. Like the vast majority in that neighborhood (our

boatmen told us), they had elected to stay with their flooded home for the time being.

The water was seeping and lapping over the front door sill as we left the house. We could imagine how the house would look in a very few minutes.

Finally it was possible, on that weird boat ride, to relax and look around to see the spectacle of it all.

All that could be seen, except for half submerged houses, telephone poles and trees, was water. It was an enormous moving brown lake. For all we could tell the Chena was connected with Cook Inlet, the Pacific Ocean and Kingdom Come. There was so much water.

Strangely there was no sign of life in any of the houses we passed. We could see right through their view windows. In many, the furnishings were floating around inside. In others they had been moved away or to an upper level. Finally we saw one man on a roof. He wasn't in any trouble. Just looking.

On one street, the man at the motor slowed its speed and said, "Every time I pass here I cry." It was his house, well down in the water. I didn't even know the names of our rescuers.

As soon as we cleared the hazards of the immediate neighborhood and got on a main street in Westgate, the boatman revved up and we went along at a good clip. The man up forward with a pike pole called out, "Be careful, there's a fire plug here somewhere."

So there was and just then we hit it with a shuddering thump. We were all thrown off our seats and the boat tipped over on its side. It was hung up on the hydrant. I thought then we had had it, but the boat righted itself and we were finally able to get off by pushing and using motor power. Later it was found that the accident had punched a hole in the aluminum hide of the boat.

They didn't ask us where we wanted to go, and we wouldn't have known what to answer. Just away from all that water. They took us out Airport Road, which was all under water, to a sort of sand bar where a few cars and trucks were waiting. There we disembarked and there we discovered that in the haste of our departure two suitcases had been left in the house. The baby and I had a change of clothing, but there was nothing for George, Doris, Kim and Jim except what they had on. Nothing to do about it.

Dr. Lawrence Dunlap drove the station wagon in which we made the next stage of our trip. He didn't ask us where we wanted to go either. He just drove us to the Fairbanks International Airport and helped us unload and get in the friendly, warm terminal.

The inside of the terminal building presented a strange sight. It was filled with wall-to-wall people, stretched out on sleeping bags and blankets. Many had been there all night. There was a report that 2,000 more were at the University of Alaska and still others at Fort Wainwright and Eielson Air Force Base.

Although people, and more especially young children and dogs, were moving around rather actively, they were calm. What they were mainly was tired. Everybody there had been fighting old man Chena and had taken a licking. There was an endless food line trying to get into the airport cafe. Soldiers were passing out free C rations.

A big air plane landed. Over in the baggage claim area, an elderly woman, obviously a tourist up to see A–67 and maybe go on to the Eskimo country, asked a mother who was monitoring four children, "What are all these people doing here? Do Alaskans always gather like this in the terminals? I never saw anything like this."

And neither had we. I was able to get passage to Anchorage on an Alaska Airlines flight for Doris, the children and me. George decided to stay behind and see if he could help.

We arrived in Anchorage at 11:20 a.m. The first thing I did was call my office in Washington. When I heard the familiar voice of one of the girls in Senator Gruening's office a strange thing happened. Suddenly I lost my voice because of a big lump in my throat. I don't know why. I didn't feel sorry for myself although I know I was sad about the kids' house. Just a big softy, I guess. I was broken up for a few seconds, but I recovered.

Senator Gruening told me he had been in touch with the President seeking aid and urging that he declare Fairbanks and Nenana a disaster zone. He and Senator Bartlett had talked with Governor Hickel, who arrived in Fairbanks on the same plane on which I flew out.

Looking back on it, there is plenty of ground on which to be proud of Alaskans. It is a tough country, matched by tough people, who will stay on and tame it. There was no disorder, no show of selfishness—indeed innumerable examples of its opposite—no looting. There was no crying that showed—just big old blubbering me.

Through the kindness of friends like the Herb Hilschers, the George Suddocks and the Cliff Warrens, who didn't even have to be asked, we were fixed up with a baby crib, high chair and roll-away bed to supplement what I had in the apartment.

At 7 p.m. George called. He was at the Anchorage International Airport. In a whole day of trying he had not been able to get from the Fairbanks airport to town. Town was deep under water and there would be no business as usual there for a long time. George had helped unload cases of rations, but was really only adding to the problem. So he too flew to Anchorage. Many more will do so in the next few days.

I never wanted to be a flood refugee or even a flood worker. And those are still my sentiments.

Although we are only camping in the little apartment, we are comfortable and well. Last night Cliff Warren drove me out to where I could load up on groceries, toothbrushes and other things left behind in the suitcases. Today we bought tennis shoes for Kim, Jim and Doris. They all came away in rubber boots. George, who escaped the flood in a pair of hip boots, is wearing my Donald Duck shoes and refusing the offer of any new shoes of his own.

Nobody knows how long it will take for the water to go down, maybe three or four days. Maybe a week. When the time is right they will return. Insurance does not cover flood damage. The house was still solid as a rock when we left it, but it will be a mess inside. But things could have been so much worse, we are all thankful.

Love to all.

GEORGE.

[The Weekly Newsletter from the office of U.S. Senator Ernest Gruening]

(By George Sundborg)

FAIRBANKS, August 25.—Damage far worse and more widespread than he expected or which anyone could imagine who has not seen it was surveyed in Fairbanks yesterday and today by Senator Ernest Gruening.

The senator was authorized by Senator Jennings Randolph (D-W. Va.), the chairman of the entire membership of the Senate Public Works Committee, of which Senator Gruening is a member, to go to Alaska and represent the committee in visiting flood-ravaged areas.

Senator Gruening was accompanied here by two members of the Public Works Committee staff, Harold Symes and Joseph van Vladricken, who will assist him in drawing up recommendations to Congress on flood control works and other measures to be taken to avoid similar disasters in the future.

Also traveling to Alaska with Senator Gruening were two experts on moisture problems from the National Bureau of Standards, William C. Cullen, building technologist, and Clinton W. Phillips, mechanical engineer.

Cullen and Phillips, who were assigned by the Bureau at Senator Gruening's request to make up a special Alaska flood team, drew up a set of recommendations to Fairbanks homeowners and businessmen in drying out their soaked buildings.

What Senator Gruening found was that although the levels of the Chena and Tanana Rivers have dropped to near normal, large ponds of water remain trapped behind dikes and in low areas. These low areas include practically every basement in Fairbanks and vicinity.

Many basements are now being pumped out as the water table drops. Walls of some have collapsed from being pumped out too soon, with the water pressure from the outside being more severe than concrete or cinder block could withstand.

As Senator Gruening toured residential neighborhoods with District Engineer Col. E. L. Hardin, many scenes of severe destruction were viewed—foundations washed away, heating plants lying at strange angles, oil tanks which had popped to the surface through front lawns, concrete porches separated from their houses.

But in most cases houses in Fairbanks look deceptively undamaged. It is only when they are entered that the effects of the flood are seen. Senator Gruening entered and inspected dozens of homes here.

Almost every house in and around Fairbanks had at least a foot of water coursing through its main floor and many had three feet or more. Basement rooms were completely flooded everywhere. The river left an inch or so of smelly brown mud on all level surfaces. Carpeting, tile and hardwood floors are ruined. Walls and paneling are drenched and warped.

Every Fairbanks neighborhood looks like a continuous junk yard today, as flooded furniture and possessions dry out on front lawns or await hauling away to the city dump. Almost every roof has carpeting on it, clothing, blankets and drapes, festooned trees, shrubs and fences. Everybody is working industriously in a family effort to save everything that can be salvaged. Typically men and women work with shovels and hoses while children pack every imaginable household article outdoors and try to scrape and wash the mud from it.

Fairbanks has been blessed with warm sunshine ever since the water receded.

The big, immediate problem, with freezing winter weather known to be only a month to six weeks away, is to dry out houses and their contents. This task has been made difficult because most heating plants are inoperable either through soaking of motors or because they are still under water in basements.

Senator Gruening moved to have representatives of the Office of Emergency Planning who are on the scene requisition portable heaters from military stock in the South 48. Cullen and Phillips are urging that all interiors should be overheated, with doors and windows at least partially ajar, to dry moisture through walls from the inside out.

Electricity is on in most neighborhoods but off in many houses because of shorts in the wiring. City water is running and remains pure. Sewers are being kept working but are a major source of worry to the Corps of Engineers. Local telephone service is virtually non-existent.

A hearing on a major flood control project to protect the Fairbanks area will be held here September 19. Senator Gruening will be represented at the hearing by his administrative assistant, George Sundborg.

Senator Gruening's inspection party also included Creath Tooley, regional director for the Office of Emergency Planning; Elmer Gagnon, director of the Federal Housing Administration for Alaska; Joseph Hong of the Department of Housing and Urban Development; Secretary of State Keith Miller, and William J. Niemi, regional administrator of the Federal Highway Administration.

The Alaska '67 site, which suffered considerable damage from bank erosion along the Chena River and from flooding, was visited. The Island Homes and Hamilton Acres areas on the north bank of the Chena River were most heavily damaged, although the Westgate and Taku areas were also hard hit, and no part of Fairbanks escaped.

"The thing which typifies this disaster and makes it worse even than the Alaska earthquake of 1964", Senator Gruening said, "is that no one who has a house or a business in the Fairbanks area escaped damage. It is universal, and in most cases very substantial."

Colonel Hardin yesterday estimated total damage at $178 million. Of this by far the largest share, $153 million, was suffered in the private sector, by individual householders and businessmen.

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William Schumacher, regional administrator of the Small Business Administration, who is here from San Francisco, assured Senator Gruening that his agency would deal generously with loan applicants and would enlarge loans to permit refinancing of existing indebtedness when hardship would otherwise occur. Similar pledges were made by Robert Butler, Alaska's SBA director; who is also in Fairbanks, and Homer Davies, who heads a staff of twenty SBA employees who are here or on their way here to receive and process applications and make loans reportedly "right across the counter."

Senator Gruening said he had never seen such wonderful spirit as the people of Fairbanks are exhibiting. Almost invariably those who had suffered severely would comment on their determination to clean up, rebuild and start afresh. Senator Gruening quoted from a statement made here this week by former Congressman Leo O'Brien, Democrat of New York, who with his wife and three sons was trapped

by the flood during a visit to Fairbanks: "If the Lord helps them who help themselves, the federal government should do no less."

Senator Gruening also announced Department of Housing and Urban Development approval of $102,000 in planning funds to help Alaska survey damage to the Fiarbanks area and to plan a rehabilitation program.

The funds, made available by amendment to a statewide urban planning assistance project approved earlier by HUD, will finance the activities of 94 two-man survey teams which will start work this weekend. Project activities, estimated to cost $130,000 including local supplementary funds, will be coordinated through the office of the governor of Alaska. The survey teams will determine damage to private property, prepare projections of loss of income and revenue to state and local governments, inventory the available manpowe· and set a survey of emergency shelter needs and available manpower, and set a survey of emergency shelter needs and available housing.

NEWS RELEASE OF THE SALVATION ARMY, ANCHORAGE, ALASKA

FAIRBANKS, ALASKA, August 22.—During the first week of tragedy that struck Fairbanks with the worst flood in the city's history, the Salvation Army provided food for the 8,000 meals served daily in the University of Alaska cafeteria.

Foodstuffs were distributed under controlled conditions to 3,000 persons who were not housed at the university but could travel to it for supplies.

Truck routes were organized with the aid of university personnel and food and supplies were delivered to another 4,000 persons in the outlying areas who were unable to reach help.

Food was delivered by the Salvation Army and served by Red Cross volunteers to a large group of people who had camped around the transmitter where radio station KFAR was broadcasting emergency information.

The first night of the flood, big semi-tractor-trailer trucks were organized into a fleet and driven through the raging waters to local grocery stores. All foodstuffs on shelves above the waterline were purchased by the Salvation Army and loaded aboard trucks by an organization of volunteers. It was taken to the university where a food distribution center was established.

The next day, as the supply dwindled and the emergency grew worse, the inventory from another grocery store was purchased and put to use. In the meantime, a planeload of food and clothing from Anchorage was arriving at the airport for the relief operations. The daily airlift of supplies continued until the highway was opened to traffic. Then the supplies continued to arrive by truck.

A clothing distribution center was established in a university building. Some 6,000 persons were issued clothing from head to foot the first 4 days.

Food and clothing were provided for the 2,000 flood victims housed at Lathrop High School. The same services were rendered to the countless displaced persons waiting out the flood at the International Airport terminal building.

Sixteen Salvation Army officers from throughout the State converged on the stricken city to carry out the relief operations. Others reported to Anchorage to man the operations there.

The mobile canteen which had served food and beverages to the estimated 4,000 evacuees as they arrived in Anchorage was resupplied and driven to Fairbanks as soon as the highway became passable.

When the waters receded from the downtown area, a warehouse was obtained by the Salvation Army and converted into a central clothing and food distribution operation. Supplies were moved into it from the university, Lathrop High School, and the airport. Additional

supplies arriving over the highway from Anchorage were delivered to the new center. As people returned to their devastated homes and discovered new needs, they flocked to the center for help.

In Anchorage, the refugees were given clothing and food by the Salvation Army. They were taken into private homes, so there was no need for mass feeding stations. But the families who had taken Fairbanks families into their homes for an indefinite period of time needed help in providing them with food. Feeding from five to 10 extra people for several weeks can wreck a family budget.

Initially all food supplies were packed and loaded aboard Alaska Air National Guard planes headed to Fairbanks. During this time, tickets were issued to those in Anchorage for the purchase of food supplies at local grocery stores. As supplies in Fairbanks began to meet the need, a food supply was laid in and a distribution center went into operation to meet the needs in Anchorage.

Winter in Fairbanks was just a short 6 weeks away when the tragedy struck. And the arctic winters can see temperatures down to 60° below zero for long periods of time. Emergency repairs are to be made quickly to help the city survive until spring. But the human needs will be great all winter. There will be many with little or no means of support. And no place to go—because Fairbanks is home.

The Salvation Army, by faith and determination, hopes to help them through the trials with food, clothing, heating fuel, and the hundreds of needs that crop up as time wears on and others forget.

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