

## THE MAIN SOUTHERN SLEDGE JOURNEY FROM EAST BASE, PALMER LAND, ANTARCTICA

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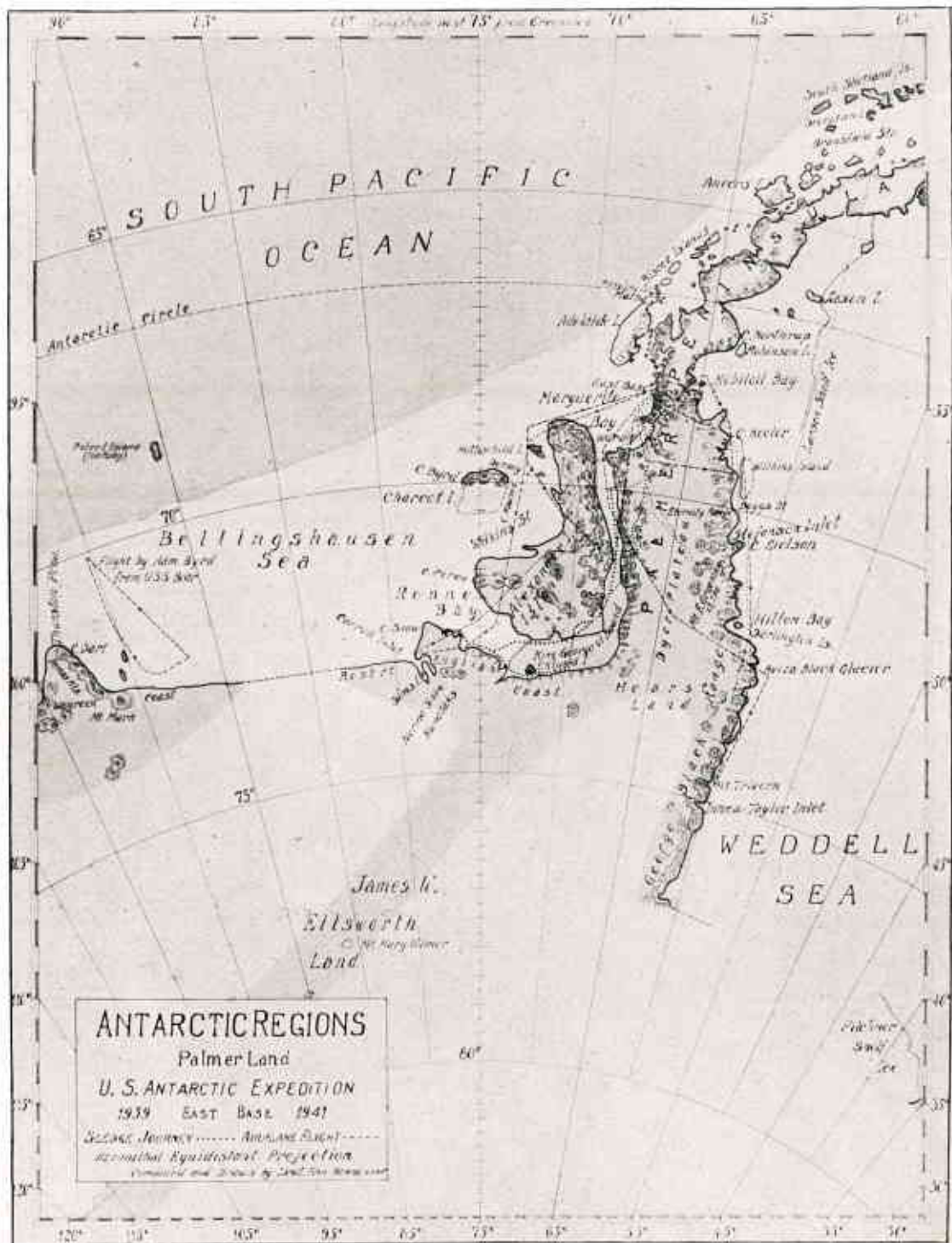
ONE of the major problems confronting the operations at East Base was to explore the regions southwest and south of Alexander Island and to determine the delineation of the coastline in the Pacific Quadrant. A plan was formulated to fly personnel, dogs, and equipment to the vicinity of Charcot Island. Such a flight would eliminate sledging over the dangerous sea ice in Marguerite Bay. From such an advantageous point, we could begin our journey into the unknown. However, weather and surface conditions prevented the plane from taking off, and

it was decided not to wait any longer for conditions to improve; therefore, on November 6, 1940, the Southern Party took its departure. It consisted of Eklund, Musselman, Dyer, Healy, and Ronne. Knowles and Hilton, acting as a supporting party, were to accompany us for seven days, by which time we hoped to have passed the worst of the crevassed area and to have climbed the elevation of Wordie Shelf Ice Cache. Fifty-five dogs were divided into five teams with a load of 2,618 pounds of dog food, 900 pounds of man food, and 290 pounds of



*Photo by Carroll*

FIG. 1. The Main Southern Sledge Party. From left: Finn Ronne, Leader; Carl Eklund, Ornithologist; Lytten Musselman, Radio Operator; Paul Knowles, Geologist; Joseph Healy, Dog Driver; Donald Hilton, Assistant Surveyor and Dog Driver; Glenn Dyer, Surveyor.



MAP 1.

kerosene. Equipment, such as tents, sleeping bags, radio, cookers, personal bags, alpine equipment, etc., amounted to 1,050 pounds. The total load was 4,850 pounds.

Low clouds were hanging overhead, visibility was poor, and the surface consisted of heavy wet snow. We stopped at Red Rock Ridge where Eklund obtained a number of penguin specimens from the Adélie Penguin rookery there. They were cached for Hilton and Knowles to pick up on their return to East Base. There must have been 2,000 penguins standing there in pairs, and the hour that we watched them was most interesting.

Our course was for Cape Bertaux. A number of open leads were crossed before we passed Windy Valley, and for the three days we travelled on bay ice the dogs were fed fresh seal meat. It took us a couple of hours of scouting around in order to locate a sloping surface for entering the shelf ice. Knowles finally located an ideal place close to the cape, and in three hours, the whole party was camped 400 feet below the mountain. It had started snowing with zero visibility.

The following four days took us through the most dangerous crevassed area that, I believe, can ever be encountered in Antarctica. Huge open crevasses, over which we crossed on narrow snow-bridges, were most common; but the hidden crevasses were also numerous and they caused us great concern. We came through this region without any mishaps, although four dogs were once hanging in their lines 10 feet down, but were easily pulled to safety from the hidden crevasse into which they had fallen. On November 12, the sixth day out, the plane passed over us, returning to East Base, from a cache-laying flight to King George VI Sound. The weather was excellent; perfectly clear and smooth terrain ahead of us. It was therefore decided to send Knowles and Hilton back to the base. As our first supporting party they had finished an excellent job. The fact that they could follow our fresh track through the crevassed area would add to their safety.

Upon arriving at the locality of Wordie Shelf Ice Cache, it was found that supplies deposited there May 21, 1940, previously well marked with a 12-foot bamboo pole and an orange colored flag were now completely drifted over. Even with bearings to certain mountain peaks surrounding this area, our many hours of searching proved futile. Since leaving base, our trail radio set had

worked well and schedules were at seven o'clock every morning. On November 13, on the radio schedule with base, they were told of the heavy snowfall which covered the cache, and our suggestion of a plane placing new cache in this area, before the Southern Party headed south, was favorably received. This was to be an emergency cache both for the plane and the trail party if they should have to walk back to base and find that the sea ice was open, and the mountain passes too difficult to traverse. Should that be the case, there would be sufficient supplies for a sizeable party to remain there until the sea ice froze over again when they could then reach the base. Should this happen, a second wintering would be necessary for a score of men. However, our plan had ample safety factor, so in all likelihood, this cache would never be used. In the communication with the base via radio, we also requested the plane to bring along another cooker, since it was the intention to have the supporting party make a trip towards the Eternity Mountains, before heading back to base.

The sky was overcast and the cold winds were intensive until November 16. Late that evening it started to clear. The base told us over the radio that the plane would be ready to take off at midnight. Ninety minutes later it landed close to our camp. The temperature was then 3 degrees below zero. Cache items were soon unloaded. We had a short chat, and after a perfect takeoff, the plane disappeared in a north-easterly direction. The five of us now turned in for some sleep. At 10:00 A.M., on November 17, all our sleds were reloaded. Before departing we built a 12-foot beacon with a 20-foot bamboo pole and flag, making it easily visible for miles around.

From November 17 until November 21, we were slowly travelling southward in deep heavy snow with visibility almost zero. Distances covered were only from 4 to 8 miles per day. The plateau rises slowly and our highest elevation was 7,300 feet. It was difficult, with such limited visibility, to find landmarks previously seen on our return to base from a flight around Alexander Island, November 4. Skiing ahead with the Brunton Compass proved to be the best way of determining our direction. In pea-soup fog we made our camps. On November 21, we had a clear sky with good visibility, and from the aerial pictures we were able to locate ourselves at the top of a long and slow glacier which was free from crevasses. With a clear and seem-





*Photo by the author*

FIG. 2. View south from Blizzard Camp on Palmer Land Plateau, elevation 7,100 feet. Main Southern Party descended glacier at left to an elevation of 4,800 feet, sledging south.

ingly smooth route ahead of us, we were satisfied to release Musselman, Healy, and Dyer. The latter person was designated as leader of the party returning to East Base. They were given supplies for 21 days man food, 18 days dog food, and a sufficient amount of kerosene. Supplies had also been placed in caches, south of Wordie Cache, for their return to base. Five dogs were shot at this plateau camp, as planned.

On November 21, at 9:00 P.M., sledges were reloaded and, with the aid of the supporting party, we descended the glacier to 5,100 feet. The weather was most perfect, and we had a beautiful panoramic view ahead of us. With the aid of the supporting party, we were able to start off afresh with 15 dogs and supplies to stay in the field for 74 days. Good-byes were said, then with our two teams, we moved quickly down the glacier to the valley running north and south, and the three figures standing waving got smaller until they finally disappeared. Eklund and the author were now left to carry out alone the program of exploring south and west of Alexander Land, and to determine the continental coast line.

In the days up to December 3, the temperature stayed from 25° down to 8° F., and sledging was good on the hard surface in the long valley with high mountains on both sides. By obtaining fixes we were able to determine definitely the location of the various mountains, which had appeared in pictures taken over this area during the flight of November 12. Terrain which from the air at an elevation of 9,000 feet appeared smooth and level changed its aspect when ap-

proached from the surface. A mere shadow from an airplane may mean ascending or descending 1,000 feet on the ground. Our intention was to stay at our present elevation of 5,000 feet and travel straight south, past the Seward Mountains, then to go westward. A full delineation of the coastline from the point where Rymill's Southern Party left off could thereby be obtained. However, as directed from the base, via radio, we changed our course and headed for a cache laid down by airplane at the Batterbee Mountains. This misunderstanding caused us some delay, and we both felt disheartened and discouraged to descend to King George VI Sound. Through mountain passes, and over dangerous crevasse-filled glaciers, our best efforts were exerted. Our loads were heavy as we carried all the needed supplies in order to stay in the field for the full length of time that was required, and considered safe this late in the season. Under no circumstances would we stay out longer than to February 1, 1941, so the Batterbee Cache was of no value to us, except in case of an emergency. A 12-inch snowfall during the night caused the sleds and dogs to sink in. The distances covered were short, all of which added to the difficulties encountered in this area. While nearing the sound on a long and smooth glacier, we could see large piles of rocks covering the lower part and even some scattered rocks for miles out on the sound ice.

On the morning of December 3, we readily located the general area of Batterbee Cache, and with field glasses spotted the large bamboo pole with the orange colored marker. The fixed position of this cache was 71°45' S. latitude, 67°50' W. longitude. Photographic circles with bearings to the most prominent peaks on the east and west side of the sound were completed by the afternoon of December 4. After reloading our



*Photo by the author*

FIG. 3. Looking eastward from a camp on the Palmer Land Plateau south of Wordie Shelf Ice.

sledges, and discarding all unnecessary gear, we now headed for the table-shaped stratified mountain on the eastern (south) end of Alexander Island. We were now in an entirely new area. No surface party had ever sledged that far south in the whole of West Antarctica. Nineteen miles from Batterbee Cache, we were greatly surprised to approach pressure ice which extended beyond the horizon in a southeasterly direction. The width of this pressure was a quarter of a mile, and beyond it, extended an escarpment with an elevation of 1,000 to 1,500 feet. Snow Petrels were flying overhead, and by the water's salty taste, which we sampled in the open pressure ice, it is safe to say that the sea extends this far into the sound. The pressure here was badly broken and it took us some time to find a passage through. On a steep side bank, the lead sledge skidded and tipped over into the open water underneath. Camp was pitched shortly afterward to dry our gear. Then again we were climbing gradually, sledging on smooth surface. At the table mountain for which we were headed, was a fresh-water lake some hundreds of yards in width, extending for miles in a southeasterly direction. We skirted the shore near the mountain, and found an easy passage for hauling the sledges through the piles of rocks that covered the slope next to the mountain. Fixes and photographic circles with bearings to new mountain peaks raising up on horizon, were taken whenever the weather permitted, and we consider that a complete outline of this new area was well determined. Our highest elevation on this escarpment was 1,610 feet. We sledged on different courses until, on December 7, we headed due south in order to locate the extension of the southern shore line of Alexander Island. In two steps, one mile apart, we dropped down to the sound ice level of 150 feet, and crossed over to King George VI Sound's southern



*Photo by the author*

FIG. 4. High mountain in the Batterbee group, elevation 5,500 feet.



*Photo by the author*

FIG. 5. Batterbee Mountains looking southeasterly from Batterbee Cache.

shore. The continental coast line stretched in an east-west direction, and its exact location and bearings were determined. The elevation of the land south of us can be estimated to be approximately 2,000 feet, and its bank to the sound was very heavily crevassed. About due south of where we crossed the sound, and at least fifty miles away, could be seen a huge mountain whose height we estimated to be 12,000 to 15,000 feet. Its western side was partly covered with snow. Bearings to this mountain were obtained.

Sledging was good on the hard snow, along the continental coastline westward. The surface at some places was of a rolling nature and undoubtedly open water was in many crevasses which we crossed. Snow Petrels were also numerous here. In the sound we sighted a rock nunatak of approximately 1,000 feet in height, on top of which we built a stone beacon. Here we deposited one of the claim sheets issued by the State Department. It was very strange that Lincoln Ellsworth, when flying only twenty miles west, did not see this nunatak; however, at the time of his flight there were dense clouds in this area, particularly to the east of his flight track. Surrounding this nunatak were crevassed areas badly broken up. It took us two days to locate a passage through to the west.

On December 17, we reached an area where the surface was wavy, and finally came to a lower level with leads of open water. Seal and penguin tracks were numerous, but otherwise there was no sign of life besides Skua Gulls and petrels. No bottom could be found with our 170-foot line. These findings, as well as the saltiness of the water samples collected, told us that we now were on sea ice which on this side of Alexander Island was connected with the open ocean. Fixes, with location and trends of the continental coastline, were taken every day.

Ice pressures which looked impossible to pene-



*Photo by the author*

FIG. 6. Stratified (sedimentary) rocks. Table Mountain from Batterbee Cache looking in southwesterly direction.

trate stopped us on December 21, as we were headed for a cape. They extended in a straight line as far as could be seen in a westerly direction. The high barrier was only 2 miles off, and from a small bay we located a slope where sledging was rather easy up to the higher elevation. We went 1,000 feet up this slope and reached the cape. A strange and unexpected sight opened up for us. In an arc from  $300^{\circ}$  true clockwise to  $110^{\circ}$  true, was a sea entirely free from ice. A few large icebergs broke the blucness of the water. With our field glasses scanning the horizon, we hoped to be able to see mountains or islands in the direction of Alexander Island, hitherto known as Alexander I Land. Now, for the first time did we consider by our findings that Alexander Land was not connected with the mainland. A pack-ice belt approximately 3 miles wide was in front of the nearest barrier to the cape on which we were standing. Visibility was excellent with not a single cloud, and with this weather report, our findings were, via our trail radio, sent to the base.

Two days were spent here in obtaining a fix and surveying different capes and bays which surrounded us. As this would be our farthest westing, a 12-foot beacon was built, with a claim sheet and a report of our findings. The lateness in the season and our distance from base prevented us from continuing our westward exploration, although in returning we headed due west for a time along a high ice cliff to determine its extent. The land west of us was of high eleva-

tion, and to the south could be seen three mountain peaks, at times surrounded by clouds.

Since the supporting party had turned back, our trail radio set had been working very irregularly, and many times the base was unable to hear us. The radio operators at base told us time and again they could hear when we did have contact; but something was wrong with the generator because of the scraping signals that we were sending out. The connections and brushes were checked a number of times, but to no avail. Radio schedules with base were kept every day since we left on November 6. The contact was made mostly twice a day, occasionally four times a day, in order to give weather reports. This was needed for the safety of the plane and its crew for undertaking long flights from base.

Our sledge track was following back to a two-peaked icy nunatak, located only 20 miles from where the sound and the sea ice meet. Here our course turned northward in order to locate and survey the southern shores of Alexander Island. By this time the surface was getting bad. In daytime it was made soft and slushy by the intense heat from the sun. The dogs had tough going in this icy mess and the ice crystals formed, cutting their feet badly. Night travel was not much better, for the surface then was just like broken glass. Within four days we had to shoot six dogs since their paws were cut open and bled freely. There was nothing we could do for them. Two of the best and heaviest dogs we hauled on the sledges for days, hoping to be able to save them, but as the pulling power went down, we



*Photo by the author*

FIG. 7. Southern Party's sledge route was headed towards mountains at southeasterly corner of Alexander I Island. From our camp at Batterbee Cache, in King George VI Sound.



had to dispose of them. It was a pity to have to go to such measures, but there was no other way out, since weights, distances, etc., were so closely figured. We could not permit ourselves to make frequent stops for dogs' feet to heal. Our best procedure and the thing we were striving for was to reach the Batterbee Cache with whatever dogs were left, and there to make use of the supplies deposited for such an emergency. In our great struggle to keep the teams moving, we unfortunately lost contact with the base, so that further explanation of our condition was not conveyed to them before we reached the Batterbee Cache. By that time only seven of our dogs were left. While passing the stratified mountains and the last southeastern nunatak on Alexander Island, we were able to collect rocks containing fossils and some lichens; eggs from a Snow Petrel rookery were also collected. The ice pressure which we had to pass through to get down to the sound ice from the high escarpment had changed considerably in the short time we had been away. The original route had disappeared completely, so that a new search had to be undertaken which delayed us somewhat. At the Batterbee Cache, a message was sent in to the base telling about the conditions of the dogs' feet and of our intention to stay there for at least two weeks to repair them. We stayed there for ten days, and the dogs improved rapidly. Our last radio contact with the base was January 7, 1941, after which our generator or transmitter failed to function. Our receiver continued to work properly and by listening on regular and emergency schedules, we were able to hear bulletins regarding plans for a flight to Batterbee Cache to pick up our party, including the dogs and much of our equipment.

On January 16, just before midnight we loaded essential equipment and food for men and dogs, abandoned all unnecessary gear and extra supplies, and started to travel rapidly toward the Wordie Cache, using Stephenson's route northward along King George VI Sound. Special canvas boots were made to help the dogs on the icy crust then covering the surface. A great variety of surfaces were encountered, such as icy crust, lakes with fresh water one foot deep, soft wet snow, and finally the worst of them all, namely, the ice crystals, which would form during the night. In four days of travelling on the sound, we covered a total of 101 miles. At our last camp on the sound we heard over the radio that the airplane had fallen in a crevasse, with a ski



*Photo by the author*

FIG. 8. Mountain in southeast end of Alexander I Island, lat.  $72^{\circ} 14' S.$ , long.  $69^{\circ} W.$  Southern Party sledged westward in King George VI Sound to opening of Ronne Bay.

cut off and the propeller bent. Although the original plan of reaching base had depended on our own resources, this camp on the sound would be the last opportunity for the plane to pick us up. It caused us uneasiness to listen to broadcasts from the base where great concern was felt for our safety, and to their plans being made for our "rescue." Here we were sitting in the tent, listening to one emergency after the other, but with no way of telling the worried base personnel that we were absolutely safe. In my humble opinion too much weight should not be placed on the radio for trail use, since men going into the field always depend upon themselves to reach their destination safely. It is recognized that men picked for this kind of work should know what they are doing.

About 20 miles south of the Rymill Party's route, we sighted a long and smooth glacier. We had only a few crevasses to cross in order to reach the high elevation leading to the Wordie Shelf Ice Cache. The surface here immediately became better, and the dogs' feet improved. They were nearly perfect when we finally reached the cache. The same difficulty was encountered at Wordie; crevasses started all over again, as our earlier track had vanished. The heat from the sun had opened new crevasses, and snow bridges which we had previously crossed over had now collapsed. Without too much labor, we were safe on the lower side, and headed for Sickle Mountain. From there, we contemplated taking the new inland route back to base. At every prominent spot, we built snow beacons with a note enclosed to the party coming out to meet us. We had with us pictures taken from

the plane showing the route we intended to follow, and at no time were we in doubt as to passes, etc. A badly crevassed area extended downhill in front of Sickle Mountain, and it would have been very difficult for a party to travel in the opposite direction because of the numerous hidden crevasses. It took us three hours to cover a distance of only one mile. Coming uphill, it was easier to find passages and bridges to cross over. Our course here was almost due north. The surface had improved considerably with soft snow on top of the hard crusty ice. Below this glacier were a number of large fresh-water lakes, around which we had to sledge. An astronomical fix was obtained at the Sickle Mountain, with the bearings to the mountain peaks shown on the aerial pictures. Our sledging route ran straight across the peninsula, and from the high elevation, we could see far out over the Weddell Sea. The Nunatak (Hub Nunatak) was located eight miles down the depression in an easterly direction. The surface here was very soft and progress was slow since the dogs were sinking down to their stomachs. A fair sized beacon was built at the eastern end of this Nunatak. Enclosed was a note to a possible "rescue" party coming to us, indicating that we had passed them in this wide valley. However, we kept a good lookout at all times, for we might have been rapidly approaching each other, judging from the information heard over the base radio.

From the Nunatak, to where the trough leads to Neny Fjord, the terrain was level, and with the aid of aerial pictures, taken up the trough, we could easily pick our route. For six miles we were climbing up this glacier and then made our camp. Clouds were starting to form, and soon visibility was reduced to zero. Next morning on January 27, a strong wind was blowing, causing surface drift. This day we hoped was to be the last one of our journey. The crest of the trough was finally reached after 11 miles of travel, and with breaks in the clouds we could recognize the mountains in the entire area.

The elevation on top of Neny Valley (i.e. at the pass or "height of land") was 3,180 feet and one mile down the slope towards the Fjord, we met the "rescue" party. We estimated them to be approximately 22 miles from the base. We were travelling in the center of the valley with a good panoramic view, and we could see them half a mile to the east coming over the crest. Joy was expressed on both sides. We were glad



*Photo by Carroll*

FIG. 9. Finn Ronne, Leader and Navigator, and Carl Eklund, Ornithologist, of Main Southern Party, at return to base after 84 days' sledge journey.

to see new faces, and get news from camp, ship's position, etc., all of great interest to us. After having deposited all their man and dog food in a well marked cache, we headed for the base. We had a speedy trip down the glacier to the sea-ice, and arrived at base, at 2:30 A.M., January 28, 1941, in better condition than when we left on November 6, 1940. The greatest change noticed at the base was the nakedness of snow. When we left the base, the snow was up to the top of the buildings; now rocks, bare and free from snow, were visible.

The long journey with its dangers and hardships was over. It felt fine to be back at the base enjoying comfortable quarters and a change in diet from the monotonous trail food.

To my own satisfaction, I believe that on my two expeditions to Antarctica I have covered more miles on skis than any other man who has visited the continent.

#### GENERAL INFORMATION

During the period of our sledge journey a total of 34 astronomical fixes were established with 12 principal control stations. At these stations, complete photographic circles were taken at 30° change in azimuths, thereby identifying features that were shown on aerial photos taken over some of the regions during later flights. Resection stations were established wherever and whenever conditions would permit. From these control stations and intersection stations the positions of 320 major mountain peaks and nunataks were determined. All the features also give



elevation determinants based upon the barometer elevations of the observing stations. A new coastline extending 460 miles was discovered and surveyed on this journey.

Our major discovery was the extension of King George VI Sound, trending south and westward, and terminating into an open sea. This discovery proved Alexander I Land to be an island.

The above explanation describes the amount of surveying accomplished on this journey. It will form the basic ground control for aerial mapping in the west portion of the Palmer Peninsula, King George VI Sound, and the southern shores of Alexander I Island.

With the exception of the extended mountainous area around Wordie Shelf Ice and the glaciers in the Batterbee Mountain group, which

MAIN SOUTHERN SLEDGE PARTY,  
U. S. ANTARCTIC EXPEDITION  
MILEAGE, ELEVATION, DISTANCE

Date	Camp Lat.	Location Longitude	Elevation	Dist.	Remarks
11/8/40 P.M.	68°28.6'	67°17.6'	sea level	16.5	Departed from East Base
11/7/40 "	68°46.0'	67°39.0'	sea level	34.5	
11/8/40 "	68°58.2'	67°31.0'	315'	48.4	At 49.7 elevate 550'
11/9/40 "	69°11.7'	67°13.4'	250'	65.1	At 54.1 elevate 170'
11/10/40 "	69°13.7'	67°01.0'	250'	67.2	
11/11/40 "	69°24.6'	66°55.1'	800'	77.5	
11/12/40 "	69°29.8'	66°47.3'	1,225'	82.6	Knowles & Hilton turn back
11/12/40 "	69°31.2'	66°51.0'	1,625'	87.4	Wordie Cache
11/13/40 "	69°34.2'	66°51.0'	1,635'	87.4	Wordie Cache
11/14/40 "	69°34.2'	66°51.0'	1,625'	87.4	Wordie Cache
11/15/40 "	69°39.9'	66°48.7'	2,250'	93.1	
11/16/40 "	69°55.9'	66°46.2'	2,900'	109.1	
11/18/40 "	70°16.0'	66°59.0'	4,000'	132.9	
11/30/40 "	70°26	67°15'	5,500'	145.9	Supporting party sledged eastward
11/22/40 "	70°43'	67°06'	3,900'	164.1	
11/23/40 "	71°02'	66°52'	4,150'	184.6	
11/24/40 "	71°08'	67°32'	2,900'	198.9	
11/25/40 "	71°06'	66°46'	4,150'	211.2	
11/26/40 "	71°06'	66°46'	4,150'	211.2	
11/27/40 "	71°11'	66°44'	4,100'	222.6	
11/28/40 "	71°11'	66°44'	4,100'	222.6	
11/29/40 "	71°19'	66°45'	4,450'	231.9	
11/30/40 "	71°18'	66°56'	5,550'	240.4	
12/1/40 "	71°22'	67°14'	2,300'	249.3	
12/2/40 "	71°35.5'	67°35'	150'	263.7	Entering King George VI Sound
12/3/40 "	71°45'	67°50'	150'	276.0	Batterbee Cache
12/4/40 "	72°02'	68°19'	150'	296.6	Passed Rymills farthest south
12/5/40 "	72°12'	69°17'	1,150'	315.6	
12/6/40 "	72°17'	69°43'	1,050'	329.6	
12/7/40 "	72°30'	69°37'	1,000'	348.6	
12/8/40 "	72°37'	69°37'	1,150'	365.6	
12/9/40 "	73°04'	69°52'	800'	384.1	
12/10/40 "	73°11.5'	71°00'	100'	408.6	
12/11/40 "	73°11.5'	71°00'	100'	408.6	
12/12/40 "	73°14'	71°29'	150'	427.6	Magnetic variation 27°38'
12/13/40 "	73°11'	72°05'	150'	441.6	
12/14/40 "	73°11'	72°05'	1,000'	441.6	Magnetic variation 27°55'
12/15/40 "	73°11'	72°05'	1,000'	441.6	
12/16/40 "	—	—	150'	466.8	
12/17/40 "	73°09'	73°27.5'	5.0'	489.8	
12/18/40 "	72°53.5'	74°13.5'	5.0'	513.5	
12/19/40 "	72°17'	75°32'	5.0'	529.5	
12/20/40 "	72°12.5'	76°09'	5'	529.5	
12/21/40 "	72°34.5'	76°21'	1,000'	561.1	Farthest west, magnetic variation 30°56'

MAIN SOUTHERN SLEDGE PARTY,  
U. S. ANTARCTIC EXPEDITION  
MILEAGE, ELEVATION, DISTANCE—Continued

Date	Camp Lat.	Location Longitude	Elevation	Dist.	Remarks
12/22/40 P.M.	72°34.3'	76°51.0'	1,000'	561.1	
12/23/40 "	72°46'	75°43.0'	5'	593.1	Return journey
12/24/40 "	72°49.5'	74°56'	5'	612.1	
12/25/40 "	—	—	5'	612.1	
12/26/40 "	72°49'	73°58'	5'	633.1	
12/27/40 "	72°43'	—	5'	652.1	
12/28/40 "	72°42.5'	72°52'	150'	675.1	
12/29/40 "	72°41'	71°58'	150'	701.1	
12/30/40 "	72°39'	71°00'	150'	726.1	
12/31/40 "	72°33'	69°58'	1,000'	726.1	
1/1/41 "	72°22'	69°31'	1,150'	745.1	
1/2/41 "	72°07'	68°52.5'	1,000'	765.1	
1/3/41 "	71°53'	68°03'	150'	786.1	
1/4/41 "	71°46'	67°50'	150'	804.1	Batterbee Cache
1/5/41 "	71°45'	67°50'	150'	817.1	
1/6/41 "	71°45'	67°50'	150'	817.1	
1/7/41 "	71°45'	67°50'	150'	817.1	
1/8/41 "	71°45'	67°50'	150'	817.1	
1/9/41 "	71°45'	67°50'	150'	817.1	
1/10/41 "	71°45'	67°50'	150'	817.1	
1/11/41 "	71°45'	67°50'	150'	817.1	
1/12/41 "	71°45'	67°50'	150'	817.1	
1/13/41 "	71°45'	67°50'	150'	817.1	
1/14/41 "	71°45'	67°50'	150'	817.1	
1/15/41 "	71°45'	67°50'	150'	841.1	Left Batterbee Cache
1/16/41 "	71°28'	67°50'	150'	864.1	
1/17/41 "	71°01'	67°53'	150'	887.6	
1/18/41 "	70°35'	68°07'	150'	917.6	
1/19/41 "	70°05.5'	68°28'	150'	938.6	Started climbing glacier to Wordie
1/20/41 "	69°53'	67°47'	3,100'	969.6	
1/21/41 "	69°41'	66°58'	3,400'	969.6	
1/22/41 "	69°13'	67°00'	1,500'	989.6	
1/23/41 "	68°55'	66°50'	3,501'	1006.6	
1/24/41 "	68°48'	66°52'	2,000'	1024.1	
1/25/41 "	68°37'	66°30'	900'	1041.1	
1/26/41 "	68°25'	66°02'	1,200'	1060.1	
1/27/41 "	—	—	—	3,180'	Met "Rescue" party
1/28/41 "	68°12'	67°02'	20'	1097.1	At East Base
					Total Distance Travelled 1097.1 Nautical Miles

at many places were heavily crevassed, the route we followed was fairly good for sledging. At the lower altitudes the surface was heavy.

From our trail the terrain offered ready access to any part of the peninsula. In the mountainous area and south of Wordie Shelf Ice, our trail lay at an average elevation of 4,500 feet along the principal divide of the peninsula. This route allowed very good visibility of the mountainous areas along the West Coast of King George VI Sound, and the eastern part of Alexander I Island.

During the 84 days in the field we travelled a total of 1,097 nautical miles, or 1,264 statute miles, in 61 sledging days, making an average of 18 nautical miles per day. The longest journey in any one day was 37 nautical miles.

I should like to place on record a few remarks about my companion on this long sledge trip, Carl Eklund. He was excellent in every way; had a good sense of humor, was a hard and conscientious worker, helpful and willing at all times to do all he could when the occasion demanded

it. No one could ever hope to find a better trail partner. His scientific findings in the newly discovered area undoubtedly will prove of great value to the scientific world.

## MEMORANDUM

November 21, 1940 { Long. 67°-03' W.  
 { Lat. 70°-16.1' S.

From: Mr. Finn Ronne

To: Mr. J. Glenn Dyer, Surveyor, East Base,  
 U.S.A.S.

SUBJECT: Return of Supporting Party to East Base.

1. You are hereby designated as leader of Supporting Party which has fulfilled its mission and is now ready to return to East Base. Lytton Musselman, radio operator, and Joe Healy, dog driver, will return with you.

2. Before starting back to East Base you will sledge eastward in the direction of the Eternity Range for the purpose of surveying, etc. You are supplied with sufficient amount of man food, dog food and kerosene to last you for not more than twenty-one (21) days. Eleven dog team will haul supplies for three men. You have been made familiar with supplies placed in caches from here to Wordie Shelf Ice Cache from which you will take only what was previously agreed upon.

3. You have been provided with pictures and instructions from R. B. Black, Leader, East Base U.S.A.S., as to the route to be used from Wordie Shelf Ice Cache to East Base.

4. Best of luck to all of you.

FINN RONNE  
 Chief of Staff  
 Charge of Trail Operations