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TRAVEL REPORT

HALLEY 1986

**BRITISH ANTARCTIC
SURVEY**

Distribution:

TRAVEL REPORT

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GENERAL TRAVEL NOTES

Most people on base this year have appreciated that the Brunt Ice shelf does have good opportunities for travelling, and full use has been made of spare time and good weather to get out to visit the various places of interest. Before Winter, everyone was given the chance to go on a 6 day training field trip, and 5 such trips were made in all between mid January, and mid April. The first two went via the old Bob-Pi route to Cono's chasm, but this route was subsequently decided to be impractical for field travel, and so the second two field parties made attempts to improve on the Bob-Pi route, with one of them starting further to the east and joining up with it to get to Cono's chasm. The last extended field trip before winter made an attempt to find a route to the plateau on a bearing of 125 from base, in an area which had been observed from the BAS Twin Otter aircraft in February (see section on April 2-11 trip).

Day trips to the coast have been made often through the year, and one travelling caboos was placed at Windy Creek in February. This was used for four weekend trips between then and midwinter, and then from June to the start of the main field season in October hardly a weekend went by without the caboos being used.

Through the Winter it became a routine for Mike Howes (tractor mech) to start a Snocat on a Sunday for day trips to Windy to visit the Penguins and explore the ice caves, weather permitting. These trips were well attended and the use of the Snocat made the journey to the coast quite enjoyable, especially thanks to the radio department's VHF broadcasts.

After Midwinter, due to the unreliability of the Citations in the cold, the field Alpines were used for weekend trips to the caboos. The caboos was normally kept well stocked with food, and sleeping bags were left there all the time in case anyone might have been forced to lie up while making a day trip to the coast.

The cross country skis sent in this year have been used by a number of people and are much appreciated. There is also the general feeling that mountain skis would be most suitable for skiing in the Hinge and at the coast, so a request has been placed for some more pairs of these. The Koflach Viva boots supplied are really not warm enough for skiing in Winter when the temperature is -40 (they are described as Alpine summer boots) Koflach Ultra Extremes would be more suitable for Halley.

During the main field season, one party went to Christmasbox Hill, and the other three all went to the new playground area in the Hinge at 'Monster Canyon'. The second travelling caboos was taken to 'Jelly Chasm', 36km from base on 125 degrees, as a depot. A VHF Yagi was mounted on a 30ft telescopic mast which made VHF communication with base possible. See Communications report for recommendations on field

communications.

A set of travel regulations was received from Cambridge, which were generally thought to be useful, and these have been adopted for field travel.

In summary 1986 has been an active year for recreational field travel, and hopefully the experience gained in various trips this year, for example to Christmasbox Hill, or manhauling will be passed on to future generations of Halley fids. Halley may not be a field operations base, but field travel is one of the most important morale boosters, and safe travel and training in the correct use of equipment should be encouraged at every opportunity.

FIELD TRIP TO CONOS CHASM FEB 1ST-10TH
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Personnel: Dale Heaton, Ben Chappel, Pat Lurcock, Keith
Christie

Equipment: 4 Alpine skidoos
3 Nansen sledges

Day 1. Base to Black Flag depot.
Day 2. Black Flag to just beyond Wrecker's
Day 3. Blown in
Day 4. Arrive at Cono's
Days 5-9. Skiing, Climbing, blown in at Cono's chasm
Day 10. Cono's to base.

FIELD TRIP TO HINGE ZONE 13-21 FEB
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Purpose: Recreational trip to Cono's Chasm, to try and find route through Wrecker's Ravine to Plateau rise if conditions permit.

Personnel: Toby Clark, Mike Howes, Paul Aslin, Tony Maggs

Equipment: 4 Alpine Skidoos, 2 Nansen sledges

13 February

Dingle day. We left base after lunch, and reached Black Flag after 2.5 hours travelling over moderate sastrugi. At the caboose we roped up in pairs, two skidoos linked by 100ft rope towing one sledge, and set off on the Bob Pi route. No real problems were encountered, although some of the slopes in Rosette had become quite steep. We reached Cono's at 8.00pm, to set up camp and have dinner outside.

14 February

Dingle day. We spent the morning trying some downhill skiing on the 100yd slope behind the camp, and were flown over on three occasions by the BAS Twin Otter, which had flown into Halley the previous night. In the afternoon Paul and Toby spent some time skiing around the chasm.

15 February

Sunny but windy. In the afternoon Paul and Toby went skiing towards Wrecker's, and made a rope descent and ascent of the cliff face on the north side of Cono's.

16 February

Blown in

17 February

Blown in

18 February

Blown in

19 February

Blown in

20 February

Manky, not much wind, lots of very soft drift around the camp. For the sake of doing something we built an Igloo in which we ate our evening meal. This was not of the standard Eskimo construction, but was built by using fuel boards from the sledges as shuttering to pack loose snow tightly. Dunnage was used to support the roof at first, but was eventually withdrawn, leaving a free standing igloo which had been dug down inside about four feet. (contrary to the 'two men in twenty minutes' stated in National Geographic, this took four men one afternoon).

21 February

Dingle day. We awoke at 0800 and were ready to leave by 1200.

Some problems with the soft snow were encountered in Rosette, requiring all four dogs to be linked at one stage to get the sledges up the slope. We just made it back to Black Flag before the contrast started to disappear, and set off on the instructions of the BC to try and find a new route back to base, following his aerial reconnaissance from the Twin Otter. We followed the following bearings:-

050 5km

010 3km

340 36km to base. No crevasses were encountered, but some large filled in chasms had to be crossed. The rest of the trip back to base was marked by the difficulty in starting off on level ground in the soft snow when towing a sledge and occasionally having to double head to get going.

FIELD TRIP TO WESTERN HINGE ZONE APRIL 2ND-11TH

Personnel: Toby Clark, Dale Heaton, Graham Wood, Chris McDaid

Equipment: 4 Alpine Skidoos, 2 Nansen Sledges

Purpose: To reconnoitre for a new route across the hinge zone onto the plateau rise. Following the flights over the hinge in the BAS Twin Otter, it was felt that a good possibility for a route existed further to the east from the current two routes and Black Flag depot, which are less than 1km from the sea.

2 April

Dingle day, good miraging

We departed from base at 1200, starting out following a compass bearing of 125 magnetic. As we had limited supplies of dunnage we marked the route at intervals of 2km for the first 15km and then at intervals of 1km, when the ice shelf started to have gently rising and falling slopes. We carried on straight on this bearing until 36km from base we encountered the first large chasm, which shows up well on the Landsat photo of the Brunt Ice Shelf which is on base. The time was now 430pm and it was getting dark, so we set up camp and retired for the night to the ominous sound of the wind increasing.

3 April

Blown in.

4 April

Blown in.

5 April

Sunny, but too windy to travel. Drifting slightly.

We managed to ski across the chasm and probe a safe route for the skidoos in the hope that the weather would clear for us.

6 April

It didnt.

7 April

Dingle. We were ready to leave by 1000am and negotiated the chasm without any problems. A course of 160 was followed for 8km until the second chasm forced us to choose to go right or left. We went 2km eastwards but did not think that there were any places where a field unit could get down, so we backtracked and headed west, along the edge of the chasm. At one point we drove onto a large block about 500m long sticking into the chasm hoping it would have a windtail on its western edge, but it did not. Eventually, after 8km we found a windtail which looked hopeful, and stopped to walk the route, down into the bottom of the chasm. It would have been possible to take the field units down, and get to the other side of the chasm, but as it was getting late we returned to the doos and set up camp.

8 April

Blown in. Temperature on base was -38C

9 April
Blown in.

10 April
Blown in.

11 April
Awoke at 0700 to find it was dingle, and some of us were packed by 0705. There was no time to explore the chasm any more, and the contrast was decreasing, so we headed back along the route we came, putting in more dunnage. We reached the first campsite by midday, and then set off on 305 for base. We did miss base by a couple of kilometers but visibility was good so we did not get lost, and we arrived back at 300pm.

Conclusion

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If we had had better weather it should have been possible to cross the second chasm. What lies beyond that is unknown, but it does not look as though there is more than one or two kilometers to the start of the plateau rise, and this looks in places to be free of major crevasses. Obviously these observations were made from the ground from some distance so should not be taken too seriously, but the route is probably worth another attempt, especially if an effort is to be made to make balloon flights from the Hinge as was done last year.

FIELD TRIP TO INVESTIGATE POSSIBILITY
OF A NEW ROUTE THROUGH THE HINGE ZONE

Dates : 3rd - 13th Oct '86.

Personel : Toby Clark, Paul Aslin, Graham Wood, Phil Anderson.

Equipment : 4 Field Alpine Skidoos
3 Nansen Sledges (2 as complete field units,
1 of dunnage and fuel).

Purpose : Prior to winter the caboose depot was removed from the old Black Flag site as it was getting close to the coast, part of the drumline from base to Black Flag was in danger of breaking out and both the Bob Pi route (travelled 3 times in Feb/Mar to Conyo's) and the start of the Gill route (examined in March) were heavily cravassed and rapidly changing.

Thus it was decided to abandon this area for recreational field travel and look for another much further East.

A BAS Twin Otter visited Halley in February and flew a few trips over the Hinge. No form of aerial survey was undertaken but it was noticed that there were some less chaotic areas further East. The last field party out before winter (including Toby & Graham) headed off on a bearing of 125' from base to investigate. They crossed one small chasm easily and camped on the edge of a second. Due only to bad weather they could get no further but reported good prospects.

Our intention was to follow the route taken by this party as much as possible and then to find a new, safe vehicle route through to the plateau rise.

A week before departure we located the sparse stake line and improved it out to 15Km from base.

DIARY

3rd Oct. Left base at 1000 on the stake line at 120'. Beautiful, warm, clear day; good view of the Hinge. After 15Km we could see no more old stakes so continued on 120' laying a comprehensive stake line. At 18Km we linked up in pairs as the bondu was undulating. At 21Km we saw base miraged up on a bearing of 302' (so still on a good course!).

At 32Km we eventually sighted an old dunnage stake (causing a slight kink in our stake line). Then a few more lead to a large cross stake on the edge of Jelly Chasm. This was removed and we made camp on the top of a rise about 0.5Km back from the chasm. At this site we erected a 10m mast with VHF yagi on top, pointing basewards. We did not make VHF contact with base that evening.

4th Oct. Another perfect travelling day. We set off on skis to probe a route across Jelly Chasm. This proved to be extremely straightforward at this point, with just one large but very thoroughly bridged cravasse at the bottom. Jelly Chasm runs approx. 50' - 230'. Further SW both sides are shear but

further NE it peters out to become rolling hummocks in the shelf. We returned to camp and had good VHF comms with base - they had turned the VHF yagi on base to point in our direction. We packed up, depoted 4 empty & 4 full jerries of fuel at the mast and left at 1400.

After crossing Jelly Chasm we followed a bearing of 160° for 8Km to the edge of the very large canyon which appears to be at the base of the plateau rise. Our route was to the left of several small cliff/cracks and heading for a large, greenish, hump-backed berg in the canyon. But on the whole the area is relatively undisturbed shelf.

We started numbering the dunnage but soon abandoned that idea!

At the canyon we turned right and travelled along the side of it. We found a few of the pre-winter stakes and were able to follow them to the same camp site used previously. It is 15Km from the first camp and at the top of an easy ramp down into Monster Canyon.

5th Oct. Left camp on 'doos to explore the canyon and find a route up the other side. Our entrance slope was straightforward and just about the only entry suitable for skidoos that we could see. The canyon is 1 - 2Km wide and is mostly flat sea-ice with cracks, tiny leads, several large bergs and a fair amount of choss. We found lots of nice windtails up what we took to be the other side, but each time we walked up one we just found ourselves ontop of another berg. Twice we did scale the furthest cliffs but these were not skidoo routes and there were still some large cravasse fields to negotiate before the plateau "rose".

6th Oct. Headed East along the floor of the canyon and climbed up more bergs but appeared to be getting further from the plateau rise. Found a moraine deposit of igneous rocks on top of an up-turned berg close to the camp and collected a few samples.

7th Oct. Again we were out on 'doos looking for a route. This time went West for several Kms in the canyon. More large bergs in this direction but no hint of a let up in the cliffs of the South side of the canyon. So we gave up our attempt to find a route through and decided to enjoy the remainder of our jolly playing in Monster Canyon and remain at the same camp site.

8th Oct. Blowing & overcast. We were glad of a day of rest after the activity!

9th Oct. Drifting a little but otherwise dingle. Spent the day skiing and clambering around in the canyon.

10th Oct. Perfect weather again. Skiing and cravasse rescue practice.

In the evening Phil & Graham returned to Jelly Chasm to meet with Mick & Anthony who had brought a travelling caboose to act as a depot alongside the mast. They also laid 100 drums along our route from base. Phil & Graham returned with fresh supplies of film and potato at 2100.

11th Oct. Very gusty wind. Confined to the tents for most of the day but did get a short ski.

12th Oct. Clear, calm, warm day. Had a last look around Monster Canyon, packed up and returned (linked up) to the caboose at Jelly Chasm, improving the stake line slightly on the way. Then went for a drive to the West along the South side of Jelly Chasm to get a good view of the area. Spent the night in the caboose in HF & VHF contact with base.

13th Oct. Returned to base on another warm, sunny day with a bit of drift. We straightened out a few kinks in the drum & stake line on the way.

Summary of Route

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Base to Jelly Chasm

Drum and stake line.

Leaves base at 125', bends slightly (to left) to 120'.

37Km to caboose and mast and depot of:

- Food
- 400 l Petrol
- 200 l Avtur
- 200 l Paraffin
- 12 l Oil
- Dunnage

Jelly Chasm to Monster Canyon Camp

Stake line (ignore

numbers on dunnage - only a few anyway).

From caboose: 75' to X on nearest knoll. Down spur, cross well bridged cravasse, up slope to X.

Then 160'(ish) for 7.5Km to X at edge of canyon. (To left of 2 small cliff/chasms, to left of larger cliff/crack. Head for large, green hump-backed berg, "Whale-Meat Sausage", in the canyon.)

Turn right along edge of canyon, 235' for 4.5Km to X.

Then 210' for 3Km to camp at large X. There is a small supply of dunnage here.

From here there is an easy ramp down onto the sea-ice in Monster Canyon.

Conclusions

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A most succesful and enjoyable trip, assisted by exceptional weather for the timne of year. We did not find a route through the Hinge to the Plateau Rise but did establish an apparently safe and stable route to Monster Canyon. This extensive sea-ice canyon is an ideal destination for recreational field trips from Halley. It will be continually changing but there are opportunities for lots of interesting skiing and rope-work. However it could be less stable at the end of the summer. (This reads like a travel brochure!)

FIELD TRIP TO MONSTER CANYON OCT 19TH-27TH
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Personnel: Mike Howes, Pat Lurcock, Mark Row, Chris McDaid

Equipment: 4 Alpine skidoos
4 Nansen sledges

Day 1. Base to Alsation's plateau on South side of Monster Canyon.

(Marked by 'Warning - Lark's vomit' sign)

Days 2-8. Skiing, climbing, Abseiling, skidooring.

Day 9. Return to base

Day 10. Skidoo to sea ice, Mobster, Windy, Ginbottle.

FIELD TRIP TO CHRISTMASBOX HILL - NOVEMBER 1986
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Personnel: Mike Tracey, Mal Smith, Steve Ault, Gary Whitehead

Equipment: 4 Alpine skidoos (1 depoted on glacier)
 2 full field units
 1 Nansen sledge of dunnage
 1 'D' sledge with 45 gallons fuel

Route: From base to N9 along stake line - 60km. From N9 to first chasm 9km on bearing 110. Probed & crossed first chasm. From first chasm 22km on bearing 060 Probed and crossed second chasm. No crevassing encountered between 2nd chasm & grand canal which are about 92km apart, on bearing 060. Christmasbox Hill was visible from Grand canal. Found route across Grand Canal, and crossed sea ice for 14km to a low point on the ice cliffs. Probed & crossed route from sea ice to shelf ice. 21km on bearing 020 to Christmasbox Hill. Crossed the choss at the base of Hill, and reached summit. Return trip was exactly reverse of the above.

Other points: One skidoo was depoted at the start of the glacier, the spare rider rode the fuel sledge and took compass bearings, which were relayed to the skidoo driver via hand signals. The other divers laid the dunnage line. The 'D' sledge, dunnage sledge and fuel drum were depoted 2km from Grand Canal.

Hazards: 1st chasm. 9km from N9 widens towards the coast. Fairly easy as the area does not appear to be very active.

2nd chasm. 22km from 1st chasm care must be taken as crevassing cuts off at various different angles, and deviations are required to find a safe crossing point.

Snow Humps. 2km from Grand Canal on the Glacier side, a line of humps about 5m high running parallel to Grand Canal. Origin uncertain but composed of soft snow, take care when climbing them.

Grand Canal. The shear point between the glacier (moving 1-2m per day) and the sea ice (stationary). Exercise caution as the sea ice here is unstable and thin in places with open water up to a few metres wide.

Ice cliffs. 14km from Grand Canal and on sea ice side, leading up to shelf ice. Very active area with tide cracks and crevassing. Exercise caution in this area.

Christmasbox Hill base. littered with small cracks, but unless a viable route is obvious probing will be necessary.

Total time in field 12 days
 Total travelling days 6
 Total manded in days 6
 Fuel used 130 gallons

MANHAULING

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Two manhauling field trips were made this year, both by Paul Aslin and Toby Clark. Some training was attempted, and this consisted of skiing out to the Clockwork Orange caboose (1.8km from base) with a manhaul sledge loaded with six 20 day manfood boxes. These trips were made about once every two or three weeks between May and November, so did not really give any physiological training benefit, but at least we obtained some idea about how much we could haul, and how easy the going was. The major difference between this year and the manhauling trips made last year was that we used skis, and it must be stressed that skis make the going much easier. Either cross country skis (with fish scales or waxed) or mountain skis with skins can be used, although this year only one pair of skins existed on base which fitted the base skis. On hard ground it may be felt that walking is as fast as skiing, but if the surface is slightly soft then walking tires the legs very quickly.

The first trip was for three days to Ginbottle. The following equipment was taken:-

- 1 pyramid tent
- 1 Squadcal & accesories in rucksack
- 5 gallons parafin
- 1 rescue sack with basic rescue/climbing gear
- 1 box with primus, dried food for 10 days, basic tent box
- 1 rucksack with personal gear

Total estimated weight 240lbs

This was rather lighter than the loads we had been training with, and so we were pleasantly surprised.

We set off on 7th November at noon following the N9 stake line, intending to turn off towards Ginbottle when we were nearly due South from it. A comfortable way to travel was to haul for one hour, and then stop for chocolate and a drink of water. After 3 1/2 hours of this, into a 15kt headwind we set up camp and rested until dinner and the radio sched at 8.00pm. We awoke at 0400, and started off again at 0630, reaching Ginbottle at 0900. By this time we had both caught the sun, but otherwise were thoroughly enjoying ourselves. After resting until 1.00pm we started the real jollyng, and skied to the West, abseiling down to the sea ice in the same chasm which had opened in Winter 1985, and which was now completely open to the sea ice. While skiing out to the Ginbottle Berg we counted 107 Weddell seal cows with pups. We returned to camp for the 800pm radio sched. The next morning we skied to the East for about 3km and tried unsuccessfully to find an easy slope down to the sea ice, but there were places where it would be possible to scramble down safely. We had decided to break the return haul to base into two, so we set off that evening and hauled for 3 hours until 845pm. A more direct route was taken back to base, as we could see base miraged for most of the way. The final haul into base was made on the morning of 10th, arriving back at 1000am after 2 hours. We were rather tired and aching in a few places, but the trip was extremely satisfying, not only because we had had

brilliant weather, but also because we had found it not as hard as we had originally expected.

Towards the end of November we both felt the need for another jolly, and decided to manhaul to the Penguins for just one night. We packed a similar sledge, but with only one gallon of parafin, and less food. The trip to the coast was made in the same fashion of one hour hauling between stops, and in all it took 3 1/4 hours to get to the top of the cliffs overlooking the Penguins. We rested for a few hours, and after a radio sched which included talking to the field party in the hinge (with whip antenna) at 800pm, we went skiing around the coast to the Tilted Berg at Windy, arriving back at the tent at 0200am. The next morning, after a night sleeping to the noise of the colony we skied to the east along the coast for a few kilometers, and then tried to get some rest before the 3 hour return journey to base.

This second trip was very tiring as we tried to fit in as much as possible into a 36 hour period, but for all this was most enjoyable and proved (to us at least) that manhauling is fun. (Unfortunately plans for a third trip were foiled by relief)

KEY TO SKETCHMAP OF HINGE ZONE ROUTES FROM HALLEY

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SEPTEMBER 1986

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This map is traced from the LANDSAT image of the Brunt iceshelf dated 28.2.85. It's purpose is to show the three routes travelled to and from the Hinge zone from Halley during the course of the pre-winter field season in 1986.

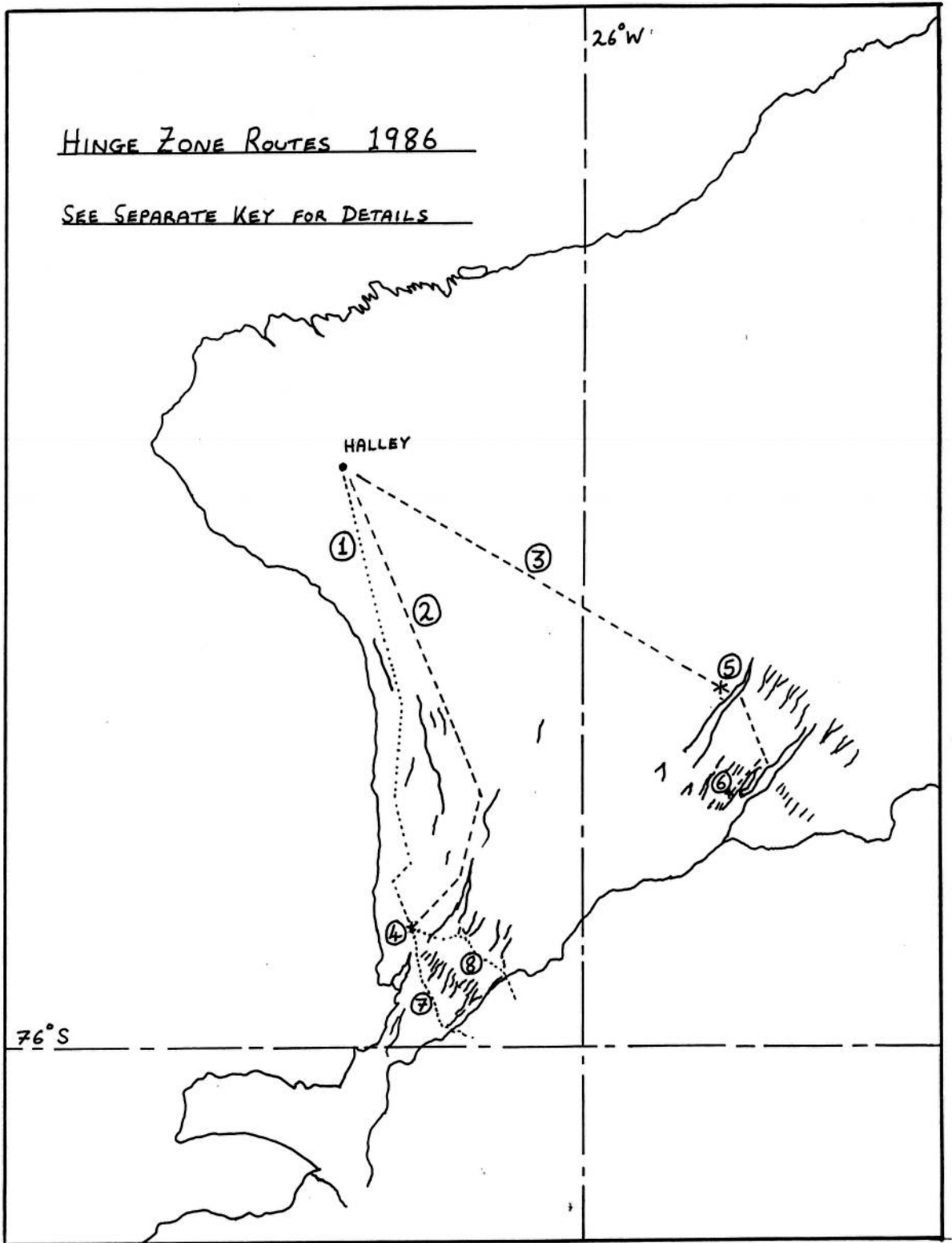
The following numbers refer to the numbers circled on the drawing.

- 1) Route to Black Flag depot used in 1985, and February 1986.
- 2) Route used after route 1 had been surveyed from the air.
- 3) Route surveyed by field party in April 1986, and staked.
- 4) Old Black Flag depot, now removed.
- 5) Proposed site of new depot at 'Jelly Chasm'.
- 6) Furthest point reached by field party in April 1986.
- 7) Approximate line of Gill route.
- 8) Approximate (very) line of Bob-Pi route.

The distances and bearings of routes 2 and 3 are known as accurately as can be ascertained with compass and skidoo milometer.

HINGE ZONE ROUTES 1986

SEE SEPARATE KEY FOR DETAILS



This report was compiled by Toby Clark, with contributions from Paul Aslin, Pat Lurcock, and Steve Ault.

Thanks are due to Len Airey for his help from Cambridge, and also for compiling the travel regulations.

Thanks are due to Mike Howes for keeping the doo's running, and Dale Heaton and Pat Lurcock for tending to the sledges.

Signed Toby Clark (VLF physicist)

Signed Mick Roscoe (BC)