Experiences of attu Expedition 9-3-50
done 9-13-50

Road

The road from aerological station to Alexai Point is very bad. The airline distance across Massacre Bay is only about six miles. The shortest route along edge of bay is about ten miles. However detours bring the distance up to about twelve miles. The total elapsed time of transit is about 40 to 45 minutes. The original road built by army engineers in 1943 wound its way along edge of bay. Numerous cuts were made thru ribs of hills which run down to water. This material was used to build up the intervening beaches to a sufficient height. Apparently the last detachment of troops left attu in the summer of 1948. Since then the roads have deteriorated due to neglect. Floods due to melting snow last spring, and heavy rains washed out several places in the road and particularly around bridge structures. These were not fixed at all, or done very badly. Several places the grades are over 30%, for short distances where the trail dips down into and climbs out of washouts. Thus the vehicles must operate in low gear about half the time. Four wheel drive is imperative. None of the road is paved. The surface merely being crushed rock. While the drainage is excellent and no-

puddles exist in the road, a very bad dust is stirs behind each vehicle. This not only covers any following vehicle but also may be blown into originating vehicle by strong winds which are nearly always present. Some oil or asphalt covering is necessary to settle the dust. The road was apparently built on a basis of expediency. Thus it winds around a great deal. This prevents any speed being attained on even the good parts. Since a considerable number of cuts were made where the ridges of the hills went right down to the sea, it was false economy not to enlarge these, or tunnel, in order to straighten out the road. Since both ends of the road are near sea level and it follows the shore, the maximum altitude of the road is less than 100 feet. Thus there is no reason for steep grades.

To the occasional traveller, a bad road is merely an irritation. However, to one who must traverse it two or more times a day the matter is intolerable. The price paid for a bad road is:

(1). Time of transit three times what is necessary. Transport done on paid time which is waste of salaries.
(2). Great wear and tear on vehicles. Trucks not available due to time for repairs. High repair cost.
(3). Very poor gas mileage due to much use of low gear.
(4). Bad effect on personnel who are all worn out by continuous bouncing and in a very bad humor when they arrive at job.

Shelter

The only shelter at Alexai Point is an old quonset hut with one end knocked out. Part of it has a cement floor but the windows and rear door are gone. These were closed with celotex and an improvised lighting system installed. No heat whatever is provided. A few benches were installed to hold equipment. No chairs were provided. The open end of hut was partially closed with celotex; but no front steps or porch was provided. This bad set of circumstances was due to poor planning and no realization of the consequences. The price paid for this situation is:

(1) Personnel not anxious to go to work because it will be a long cold day. Working at a cold job where it is possible to warm up for ten minutes every hour is one thing. Working in the cold all day without being able to get warm at all is something else.

(2) The dampness is worse than the cold on exposure and moral. By raising temperature from 50° at 100% to 70° at 50% is a tremendous improvement nearly by applying heat.

(3) Dampness causes tools to become slippery and hard to handle. also processes of rust are hastened. Work is delayed

(4) Even a slight drizzle will cause the personnel to be miserable because there is no possibility of drying out.

(5) The old quonset was adequate shelter from wind except when it came from direction of open end.

(6) No plumbing facilities were available. Therefore it was impossible to even wash when hands became dirty or greasy.

(5) all merchandise must be securely tied down in vehicle to prevent shifting or falling out. This wastes time at both loading and unloading.

(6) Merchandise is broken by bouncing.

(7) Merchandise and personnel covered with dust at end of trip. Cleaning of both is a nuisance, aggravation and waste of time.

(8) More vehicles needed due to greater use, large time out for repairs.

(9) Increased possibility of accidents on road. This is particularly true in wet or freezing weather.

(10) a poor road will require more costly maintainance of many.

all the above effects are visible on run between Washington and Sterling which has a high use factor. The same are even more visible on the run between Massacre Bay and Alexai Point which has a lower use factor but much worse condition. all the above must be considered in relation to any venture on Mauna Kea. Since no personnel will be housed at top, the run must be made twice a day or more. The price of the above inconvenience may easily be $10,000 per year. If money is worth 7% it will be profitable to spend $150,000 on road to reduce operating expenses.

Transport

The only transport available was an old ten wheel truck of about 5 ton capacity with an open body having sides about 2 feet high but no tail gate; and a jeep with metal top and doors of homemade local vintage. Both were in poor order in that the doors didn't shut; when tied shut no ventilation was provided, fumes from leaky exhaust were insufferable, the odometer didn't work and they were hard to shift plus a long series of flat tires. One wheel came off truck because studs on brake drum broke off. The short wheel base of jeep made it very rough on the roads. While the truck had a longer wheelbase and more wheels it rode roughly also due to stiff springs. Once we had it loaded with about 6 tons of equipment and it rode much more smoothly. It was necessary to haul most (8 to 10) of the party in the truck because the commander wanted to use the jeep. The wind, rain and dirt made the trip miserable. Some mattrass were put in bottom of truck and this helped a bit. However there was nothing to hold on to inside truck and the personnel banged around badly. After 45 minutes of this treatment the rider was in no mood to do constructive scientific work. It was found that the truck rode quite a bit better if all the air was let out of the eight rear tires. This was alright for hauling personnel, but not for hauling heavy merchandise.

Any venture on Mauna Kea will require closed vehicles for hauling personnel. A heavy station wagon such as a Pontiac or Mercury will be satisfactory for scientific personnel and light apparatus. The contractor will need a good bus. It should not be like bus used from Washington to Sterling which is merely an army ~~post~~ bus and having seats which tips the wrong way. It should be like a Greyhound bus with comfortable seats and plenty of legroom. The drive up Mauna Kea will be 30 to 40 miles which is commensurate with drive from Washington to Sterling. Thus even tho the road is good, comfortable transport will be needed.

Planning

Aside from planning the scientific details of the apparatus for eclipse measures, the planning was practically nonexistant. Hagen and Harrison made a trip to Attu for a few days in May. While the former is conscientious and true hard, the latter is a loud mouthed incompetent. What transpired in May is unknown, but of small consequence. Any arrangements there made with the Aerological Station personnel were purely of the verbal or gentlemans agreement type. Between May and August 24 the the Navy replaced all but one or two of the men present in May. The new officer in charge arrived about a week before we did. The new outfit knew nothing about any arrangements made with the old outfit and cared even less. We were provided with one old truck and a jeep plus any amount of gas we needed, provided we pumped it ourselves. This was the extent of cooperation of Aerological Station personnel. Within a few days a memorandum appeared on the bulletin board by the new officer in charge which notified the station personnel that Alexai Point was out of bounds. This effectively squashed any faint interest any of the crew might have had in our work. Thus it was now impossible to recruit any sailors to help on a goodwill basis during off hours. We were entirely on our own.

Facilities

The island was an immense supply dump at the end of the war, all kinds of equipment were available. About 1947 the Army came and took the best but left a wide variety of stuff. This was allowed to stay outside and rust even tho a great quantity of buildings were available. Thus everything was broken down and nothing would run. All this stuff seems to be written off as war loss because no one is responsible for it. I counted three quite similar motorized cranes. None would run, but all had some of the tires still inflated, some of the windows were broken and one had a radiator missing. It seems very likely that one good one could have easily been made out of the three by a few days work of interested people. Since we had no crane, all heavy boxes had to be lifted by us; a stupid result of mismanagement. The situation on cement mixers was the same, a dozen of all sizes were avaible but none would run. Thus all cement was mixed by hand using shovels. Since no one wanted anymore of this back breaking labor than possible, the foundations were made as small as possible; in fact, too small. A direct consequence was that the eclipse apparatus was rather unstable and quite difficult to get and maintain oriented. It also blew in the wind with considerable vibration. Thus the data somewhat impaired and this of course is the ultimate end of the expedition. A lot of

time was wasted trying to bolster up the mountings with little success using planks. The foundations were poured on top of steel landing mat. This mat lay on sand and was quite spongy. Furthermore it transmitted vibration over a considerable distance due to people walking (about 10 feet) and trucks moving (about 30 feet). The foundations should have been made directly in the sand with good wide bases. Unfortunately, no cutting torch could be found that would work. We had to dig all our own sand, gravel and boulders by hand because no operating power equipment was available. We hauled water in 50 gallon drums from the Aerological station to make the concrete even tho ponds of fresh water were available less than 200 feet away because no pumps could found that worked on no good host. When we ran out, 2 even hauled a dozen buckets by hand from the ponds. Having water up hill is work! All this heavy work was done by technically skilled personnel which was a great waste and created some ill feeling as the personnel felt they had other more important things to do.

The scientific apparatus arrived in thirty nine cases of various sizes up to 6'x6'x9' and weights up to 700 pounds. The cases were numbered for shipping identification but there were no packing lists. Since the packing was done by the shipping room at NRL, only a vague idea was had of their

contents. Thus the wrong ones were opened first.

Two gas engine generators of 10 KW capacity were available on small two wheel trailers, after the tires were fixed, these were found to be in good operating shape. While both were 60 cycle, one turned out to be 110 V single phase, and the other 220 volt three phase. This complicated the switchover system. Both used spark ignition but fortunately were not bad when moved 200 feet from electronic equipment. It might have been otherwise. We hauled gas for these in 50 gallon drums. First it was hand pumped from ground to drum on truck, then pumped again into tank of engine driving generator. Both, a lot more work, a bucket of gas was kept handy to wash ones hands in.

A preliminary group should have been sent out with adequate letters of introduction and authority to get affairs in order before the scientists arrived, a minimum of demands should be; one motorized crane in working order to lift heavy pieces; one cement mixer in order to make concrete; One motor shovel to dig sand, gravel and boulders; fix up quonset hut and install heating plant and wash facilities; Lay out north-south line and pour foundation in accordance with supplied plans; Mount tank on truck or fix tank truck for hauling water; get sofas or cushioned seats for hauling personnel in truck and fix roads at important places. The last is a very important

item and was very aggravating. all kinds of road building equipment including scrapers, shovels, drags and pile drivers were available but nothing was in operating shape. Plenty of rock drills and explosives were on hand also if quarrying were to be done. Immense quantities of piles, beams and planks, plus hardware, were available to fix bridges if necessary. all the makings of a first class construction group were available including at least 50 caterpillar tractors of all kinds up to 20 or 30 ton jobs with diesel engines. Unfortunately nobody was interested or cared. The staff of the Aerological Station was charged with running the station only and that's all. They seemed privileged to loot or destroy whatever else they wished on the island. Most were incompetent on matters other than their assigned duty. a Lt. was in charge. He seemed only mildly interested in the station and not at all in other matters. The navy policy is to replace all personnel after six months duty at this station. All hands (25 total) had only one idea in their minds. That was to get out as soon as possible after six months and to do as little as possible while at attu. The feeling of impermanence and insecurity pervaded the entire establishment.

The question of foundations for telescope mounts was aggravating in more ways than one. Until these

foundations were in, no mountings could be setup. With no mountings, no electronic gear could be installed. Until the electronic apparatus was installed nothing could be tried out and thus there was a lot of anxiety to learn what, if anything, was broken; and how much fixing would have to be done. Thus everything depended on the foundations. Now the foundations had to be installed on a north-south line so that the polar mountings would function. The maps were poor and the steel landing mat caused large errors in compass reading. Thus recourse was necessary to solar or stellar observations. A theodolite had been sent but nobody knew which box it was in, because there were no packing lists. When this was found, a long run of cloudy weather started. Altogether, about three days were lost on this mixup before the foundations were poured.

While two engine generators were available, no thought had been given to connections, regulators, etc. These were improvised in a crude way by semi skilled technicians on the job. Since the quonset hut was 300 feet from apparatus some housing was necessary for electronic apparatus. No provisions had been made. Some boxes with lashed tarpaulins were erected in a rather unsightly mess and tied down to landing mat with ropes.

Quarters

The quarters for the men were in some ways better and some ways worse than expected. Six of the men (including me) were quartered in one room about 15'x20' using four double deck beds. Adequate locker space was available and a table with four chairs was present, abundant light from overhead flourescent fixtures was good. Two more men chose to live in a nearby quonset hut where there was more space but less light and heat. The other three lived with personnel of the station at various places. Most of us used the crews wash room. This caused an overload in morning but was reasonably satisfactory otherwise.

The food was good, hearty, well cooked and plentiful. Fresh goods were quite lacking as none are grown on island and the ship comes with supplies only once a month. Milk was served on an average of once a day. Fruit consisted of apples (in not very good condition) and oranges. The milk seems to have come frozen from Seattle. When thawed, it contained a lot of fine particles of wax from the cartons. These stuck to inside of one mouth plus made it taste bad.

Hours of Work

Breakfast was served from 7:00 to 7:30, lunch from 12:00 to 12:30 and supper from 5:00 to 5:30. Since it takes 40 minutes to get out to Alexai Point from Aerological station, work could not begin much before 8:30 and we had to quit at 4:00 in order to get back to eat. a half hour was taken for lunch. This made a working day of 7 hours which wasn't bad, but a bit short. The main difficulty was that we were operating on a dst time which is about an hour and a half ahead of the local time. Thus we were really starting about 7:00 am and quiting at 2:30 pm. The mornings were always cold and wet. Usually the afternoons were much better even tho the sun may not shine because things warm up and dry out a bit. Actually we often quit just about the time things were best. The work should have started about two hours later and continued about three hours later. This poor timing was brought about by schedule of morning and evening meals.

Any venture on Mauna Kea should adjust the working schedule to the best hours of day. Work should probably end about sunset, so that a return may be made while still light.

The attic experience brought out forcibly a

a situation which is present also at Sterling. Where it is necessary to transport personnel over long distances on paid time (even on unpaid time) it will be much better to work long days. This is because the ratio of working time to total elapsed time increases. If weather conditions permit, a working day of 10 hours with a total elapsed time of 12½ hours should not be a hardship on anyone. (1 hour each way and ½ hour for lunch). On such a schedule it will be best to work 4 to 6 days and then take 1 to 3 days off to rest, and upset. The off periods may be adjusted to bad working weather if suitable forecasts can be secured. Rest days are important.

On attu we got off on the wrong foot. at first it was attempted to eat all three meals at the Aerological Station. Four truck rides a day were killing and the day was so short that little work was done. Then they started sending out sandwiches for lunch. This was also bad. Finally they brought hot food which was luke warm by time it arrived. They never did get up to hot coffee for lunch. The situation was still poor.

Any venture on Mauna Kea will require a really good <u>hot</u> lunch to be served with <u>hot</u> coffee. also someone should dish out the lunch to prevent the early and greedy from robbing the rest. a suitable place to wash and cleanup is also necessary.

Some of these ideas finally sunk in, and for the last five days on after we ate two meals at the Point each day. We probably got in ten working hours that way, as we returned to station about 9:00 pm. Nobody complained much but it was obvious people were becoming very tired. It would have been better to be able to rest a few minutes after cleaning up and then eaten the evening meal at the station.

The idea of days off didn't seem to occur to the management. Some people worked every day we were there. I took two days off, the 10th and the 13th. Continuous work without rest is poor, because peoples minds begin to get dull and wrong decisions are made and the work is not expedited. Even tho the person doesn't spend the day off resting, he has an opportunity to go elsewhere and see other things and places. This is refreshing in itself.

Toward the end the management must have realized the party was in no mood to do a lot more heavy manual labor because they secured the help of some sailors to load and unload the boxes onto trucks. We, however, packed and closed all the boxes (plus repaired or made new ones, as was needed,

Weather Comments at Attu 52°50'N 173°11'E

Aug 24th Arrived at 1200 noon scattered clouds with sunshine at times. No extra's, used Parka.

Aug 25th Cloudy in morning with rain and thunder. Partly clear and little sun in afternoon Rainbows Parka in morning, Sweater in afternoon. in morning and evening

Aug 26th Partly cloudy in morning. Clear and sunny in afternoon Warm with light breeze. Light sweater needed.

Aug 27th Clear and sunny all day. Warm, light breeze Took long walk (10 miles) in afternoon. Beautiful day. Took off shirt for heavy work in afternoon

Aug 28th Clear in morning. Partly cloudy in afternoon. Nice day. Only shirt or light sweater needed.

Aug 29th Cold drizzle all day. Heavy clouds, light wind Miserable day. Used Parka all day with hood up.

Aug 30th Clear and sunny all day. Blue sky. Little wind. Only shirt needed for hard work.

Aug 31st Faint sun at times in morning, afternoon wet and drizzle. Heavy clouds. Can't tell where sea ends and sky begins. Steady SW wind all day. Parka needed at all times mostly with hood up.

Sept 1st Cloudy in morning, Need Parka because of ground fog. afternoon sunny & warmer, light breeze. Work in shirt sleeves

Sept 2nd. Cold wind all day. Used Parka at all times mostly with hood up. Morning cloudy with ground fog and drizzle. afternoon sunny and cold.

Sept 3rd Cool & cloudy all day. Little wind, damp. Use Parka without hood to keep warm because no sun, except when doing heavy labor a sweater is adequate

Sept. 4th Cold & cloudy all day. Calm in morning. Windy and rain afternoon. Used Parka and rain coat all day. Most miserable day yet. Got soaked returning in open truck.

Sept 5th cloudy all day, Little wind. Used parka with hood down all day except for heavy work a sweater was sufficient.

Sept 6th Cloudy and drizzle all day. Used rain parka. Considerable wind. Saw rainbow for few minutes in late afternoon.

Sept. 7th Cloudy all day except for a few hours near noon. Drizzle in morning & evening. Used parka with hood due to wind except in sunshine near noon when a sweater was adequate.

Sept. 8th Morning cloudy & rain, afternoon considerable sun. Slight wind. Took off parka when sunny. Rainbow in morning. First day in more than a week there was sun at 4:30 (totality time).

Sept 9th Cloudy & rain showers most of day. Sun peaked thru faintly at times. Used parka all the time except when wind died down & rain stopped. Remained at Alexai Point until after sunset. The sun set across Massacre Bay behind some mountains which had black clouds above their tops. The rays of the sun were cut off on bottom side by mountain peaks and displayed against clouds a perfect rising sun emblem of Japan in red orange

Sept 10th Stayed at Aerological Station all day. Sun fairly visible thru clouds. Too much wind outside to use only a sweater unless working hard.

Sept. 11th This is day of the eclipse. Atrocious weather. Morning heavily overcast; by noon a wind started, and by 3:30 there was a howling gale from south with a lot of rain. Used rain parka and was nice and dry except for feet which got wet because forgot to bring rubber overshoes. The moderate exercise of cranking azimuth wheel of mounting most of afternoon kept me quite warm.

The rain apparently did not extend to Matanuska Valley Station 7 miles away. Wind at Point Mackenzie, 30 miles and due to S'ward.

Sept. 12th Cloudy all day. Rain until 3pm. Used rain parka outside. Worked inside unheated quonset hut most of time packing boxes. Sweater was satisfactory.

Sept. 13th Cloudy in morning. Considerable wind. Used Parka outside. By noon the sun came thru weakly. afternoon cloudy again. Need Parka because of wind.

Sept 14th Reasonably clear and sunny, Cool. Need Parka when just standing around. Left on Tawasa at about 10:00 am.