

*Recreation*

The Establishment of a Winter Sports Area

on National Forest Land

by

Chelsea H. Browne

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Professor of Forestry

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EFFICIENCY  
ERASE BOND  
RAG CONTENT

## INTRODUCTION

Recreation only became a problem when the joy and satisfaction was taken out of work by the modern machine. It has become a social problem of increasing magnitude ever since. The socialistic trend of our government is providing more and more leisure time to the public and so increasing the recreational demand. Much has already been done to satisfy these pursuits but nevertheless they are still far from being complete.

In Europe labor unions, churches, and political groups recognized in recreation a powerful instrument for the promotion of their own particular aims. Such was the situation in Germany, Italy, and Russia prior to World War II, a situation with which most readers are familiar. However, a country may have an extensive recreational scheme and avoid such pitfalls. England's recreational program has no political or military significance despite the statement that "the Battle of Waterloo was won on the playing fields of Eton".

Recreational planners should foresee and plan for this growing recreational demand and all developments should be flexible and readily adjusted to any potential increased use.

Winter sports are essential to a complete national recreational plan. It seems the one practical answer to the need for some form of recreation to occupy the winter

leisure time of the public.

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It is not an expensive luxury nor is it limited to the snobbish set that adorns the Sunday pictorial page. It provides the opportunity to break away from the stuffy, overheated indoors of winter and escape to the snappy, clean air and sunshine of the higher altitudes.

The ski boom began with the Winter Olympics at Lake Placid in 1932 and today it is estimated that of all the people who take vacations, 46% enjoy them during the winter months.

According to the weather maps, the snow belt covers two-thirds of this country but it has only been during the last decade and a half that widespread participation in winter sports has developed.

In 1938 twenty four million dollars were spent by ski enthusiasts and there has been an appreciable increase in the figure since that time. Americans of all ages and degrees of proficiency are learning the simple and satisfying art of downhill running and the less strenuous skill of cross country skiing. If skiing should increase as it has done in Europe, it may match the popularity enjoyed in Europe. Prior to World War II as many as 20,000 were enjoying skiing on a single weekend in Vienna.

Winter sports are definitely growing in popularity and all agencies interested in public welfare should realize their health-giving and recreational possibilities. Public funds should support the development of suitable areas and

visitors should be encouraged during the winter season. Skiing is a stable sport once it has become established, and as Otto Eugen Schneibs, author and an authority on skiing, once said "Skiing is not merely a schport, it is a vay of life".

## FEDERAL INTEREST IN WINTER SPORTS

The National Park Service and the Forest Service are the two governmental agencies doing most of the public planning for the winter sportsman. Winter sports and National Forests have made a logical combination which has worked out very well. The Forest Service has extended a welcoming hand to their winter guests and has done much to increase their enjoyment. These visitors exceeded one and a quarter million in 1938, 140,000 of which were in Oregon. These figures have considerably increased since that time.

The policy of the National Park Service is summed up in a statement by Connie Wirth, Chief of Lands of the National Park Service, as follows:

"In general, it is the National Park Service policy to encourage winter use of the areas under its management. The public is welcome to ski in the parks where it can be done with safety and without damage to the natural terrain. The limited facilities that are provided are intended primarily for the amateur. The National Park Service does not wish to construct ski jumps, trails, and other facilities that affect adversely the appearance of the landscape, and can be used only by highly skilled skiers; and it does not look with favor upon the installation of long ski tows and certain other facilities that are usually found at commercial resorts, such as Sun Valley. In none of its areas does it provide facilities for the exclusive use of any particular group or organization."

The Park Service regards the land within its jurisdiction as an exhibition piece. The Forest Service, on

the other hand, endeavors to utilize their land in a productive and useful manner. At first they did little to accommodate the winter sportsman but increasing numbers of visitors necessitated some regulation and construction of facilities. Nearby parking areas became a problem and strategically located sanitation units became necessary.

There were 254 winter sports areas in 1941, covering more than 51,000 acres of National Forest land and practically all new winter sports development will be within its boundaries.

## DESCRIPTION OF THE PROPOSED WILLAMETTE PASS

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### RECREATIONAL SKI AREA

The Willamette Pass Recreational Ski Area lies at the summit of the Willamette Pass and is bisected by the boundary line separating the Deschutes and Willamette National Forests. It extends from the Gold Lake Road, east to the Skyline Trail with a highway frontage of 5280 feet and comprising 240 acres in all.

The area is covered with a stand of scrubby Mountain Hemlock of low value, averaging 14 inches D.B.H.

The area lies 70 miles southeast of Eugene and a 108 miles north of Klamath Falls. It is readily accessible by car, bus, and rail. Transportation by car and bus is good from both directions over the Willamette Highway which is kept open throughout the year.

The main line of the Southern Pacific Railroad runs about a mile and a quarter to the south of the proposed ski area. In the past the Southern Pacific Company has run snow excursion trains from the two cities to Odell Lake and as many as 600 to a 1000 winter sports enthusiasts have taken advantage of the special rates on a single day.

This use can be expected to grow with increased development and many new organizations have become interested in the area since that time.

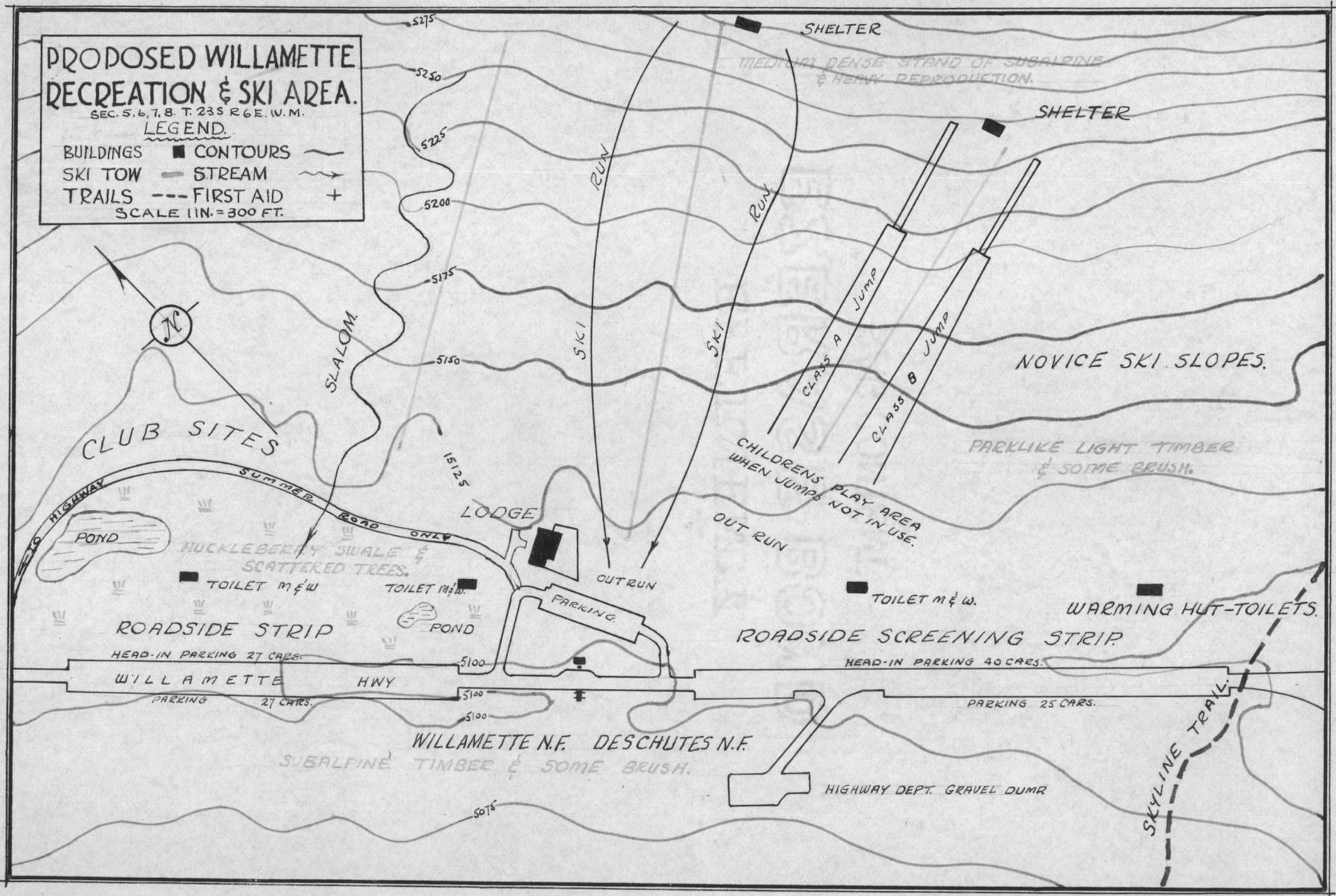
The choice of this area for winter sports use seems well justified. The topography is such that the novice as

# PROPOSED WILLAMETTE RECREATION & SKI AREA.

SEC. 5, 6, 7, 8. T. 23 S R. 6 E. W. M.

## LEGEND.

- BUILDINGS ■
  - SKI TOW —
  - TRAILS - - -
  - CONTOURS ~
  - STREAM ~
  - FIRST AID +
- SCALE 1 IN. = 300 FT.



well as the expert can be accommodated, an important consideration in the establishment of a public winter sports area. The terrain is varied enough to allow nursery slopes for the beginners and children, separate downhill runs for the skiers of varying proficiency and slalom, jumps, and cross country trails for those who so desire them. The area is well located for widespread enjoyment of the latter and the subject will be discussed later in greater detail.

The mile high elevation insures excellent snow conditions for skiing. The snowfall is heavy and generally speaking long seasons can be expected. Temperatures are constantly low enough and thawing and subsequent freezing, causing unfavorable snow conditions, are not encountered.

The comparative short length of the possible downhill ski runs is the principle adverse criticism. However, longer more hazardous runs, thrilling to the most proficient skier, are possible and this matter will be discussed in detail later in the paper.

The area is not a natural ski bowl in the accepted sense. It is spread in a narrow strip along the highway which tends to give the appearance of an uncoordinated series of facilities lacking in unity. However, it results in a desirable separation of the uses and eliminates the confusion of overlapping facilities.

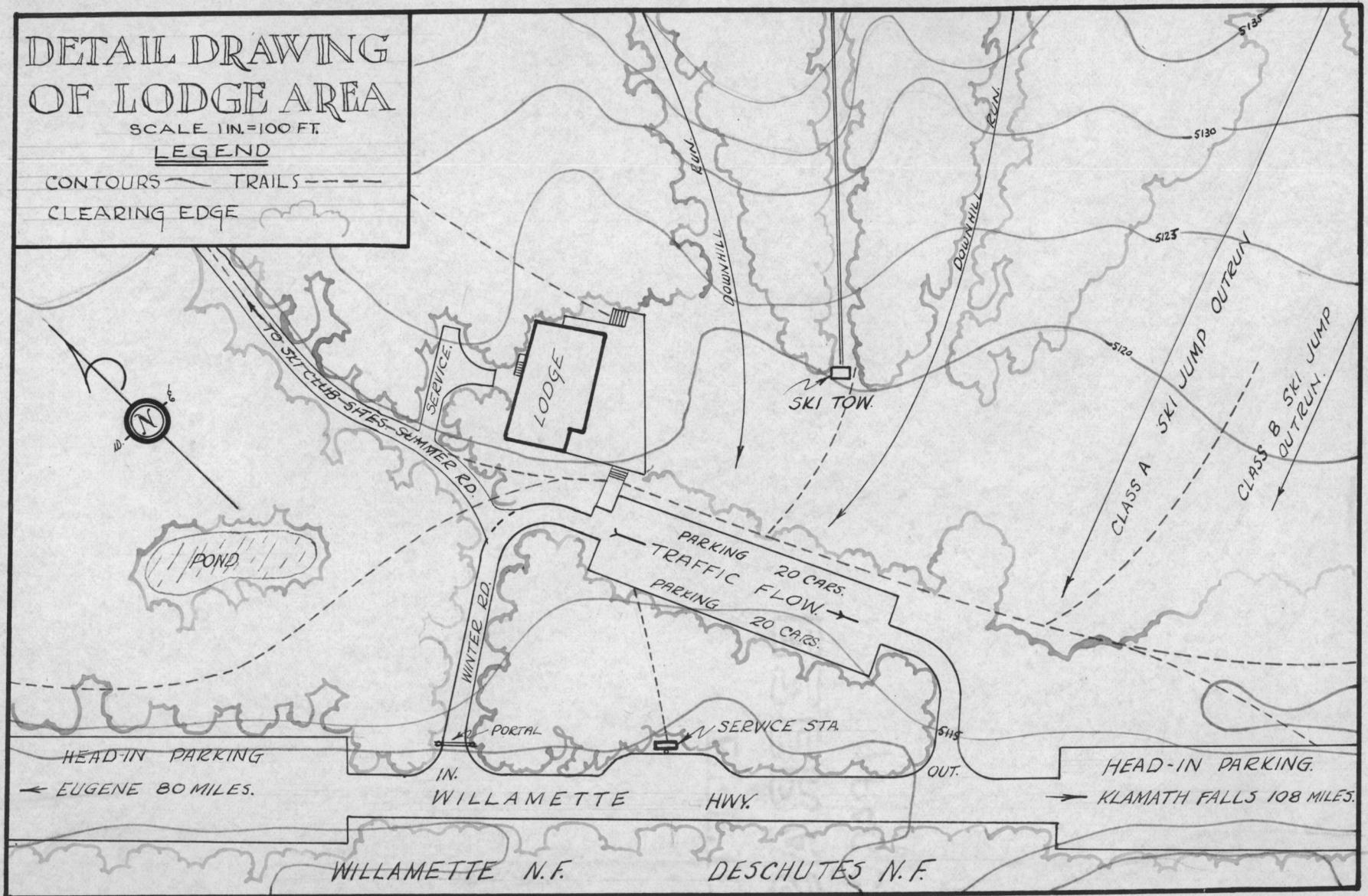
The area does not have the desirable northern exposure, a factor calling for special consideration before clearing operations are begun.

# DETAIL DRAWING OF LODGE AREA

SCALE 1 IN. = 100 FT.

## LEGEND

CONTOURS ——— TRAILS - - - - -  
CLEARING EDGE - - - - -



The area is timbered for the most part and the necessary clearing operations are costly, since all stumps should be removed or cut to ground level. Under similar conditions in the past the Forest Service has sold the timber at a low figure and required the operator to remove the stumps.

The area does not provide steep enough slopes for a slalom course of championship calibre. A slalom for the average skier is possible, however, and should receive wide use.

No area can be declared the perfect answer to any recreational problem. The favorable aspects of the best sites reduce the less favorable factors to the point where they are of seemingly little consequence.

There are many time proven rules to be followed in the design of a recreational area but some variations are nearly always necessary due to existing conditions. Nevertheless, the net results are always best when the maximum number are satisfied.

All work done during the first year should be provisional and subsequent changes made should any facility prove unsatisfactory. Such an approach would assure the best possible results.

This paper is an attempt to bring out the desirable characteristics to be achieved in the design of a recreational ski area and their application to the proposed winter sports area covered in this paper.



Timber and Snow Conditions



Existing Ski Run



Snowplow on Willamette Highway

Snapshots Taken at Proposed  
Willamette Recreation and Ski Area  
In March, 1946

## HISTORY OF DEVELOPMENT

Winter sports enthusiasts in Eugene and surrounding communities felt the need for a more accessible winter playground and through the efforts of these public minded citizens the initial steps were taken.

The Forest Service was approached with the problem and in 1939 a committee composed of Louis Waldorf, Roy Elliott, Leo Pascheke, George Korn, and Roy Temple made a survey of the area to consider its possibilities for winter sports use.

The Forest Service approved their plans and the enthusiastic sportsmen immediately started development work. A ski run was cleared and Mr. Temple built a warming hut and shelter where sandwiches and hot coffee were made available. He has also been running a small ski tow on the area since that time.

The war considerably reduced the use of the area and put an end to any further development. However, the last two seasons have seen large crowds of enthusiastic skiers flocking to the area on weekends and with further development the use should grow considerably.

The lodge chosen is typical of those found on similar ski areas throughout the country and stands at the Sugar

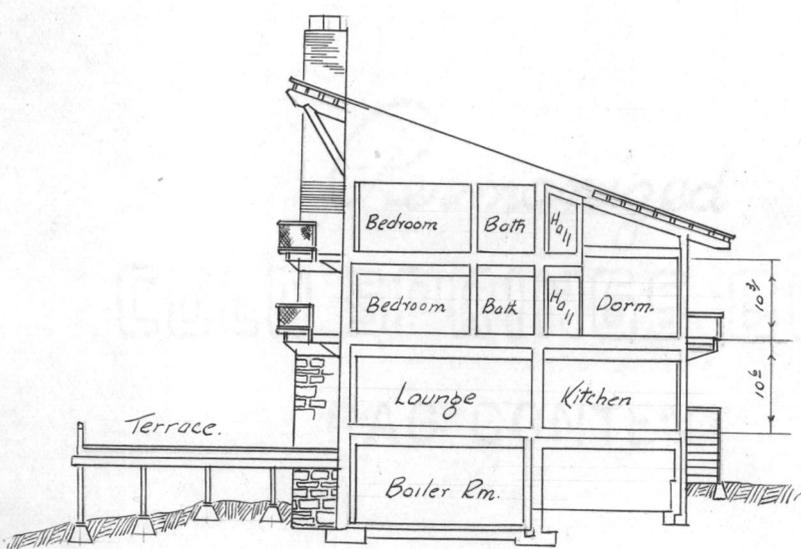


Bowl, southwest of Truckee in California. Care should be taken in deciding upon the building in order to meet present needs and all potentialities should be given careful consideration. With the allocation and eventual construction of separate ski clubs, some such lodge should adequately accommodate unaffiliated visitors.

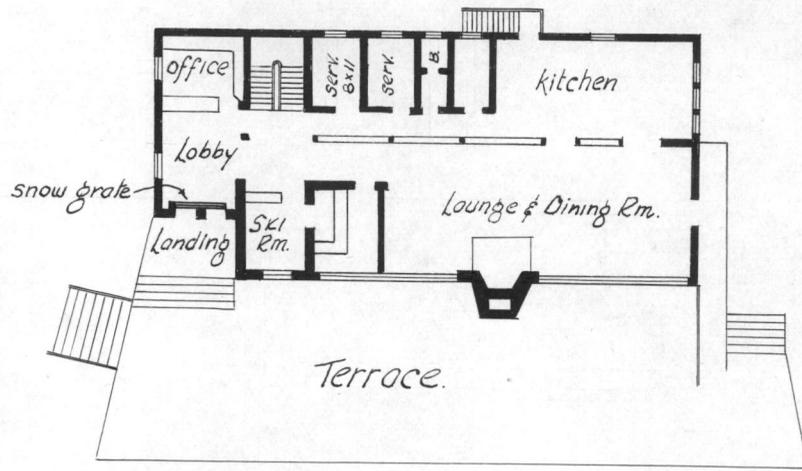
The simplicity of construction and design readily

allows its expansion to meet any increased future demand.

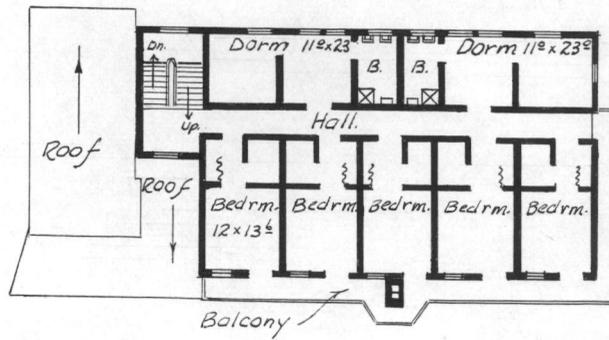
Although the construction is not too expensive, the architectural design and exterior finish combine to give a very handsome appearance that fits into the landscape very well. A large verandah, the outstanding feature, makes service to larger crowds possible. In such a recreation area there are many visitors too old or otherwise unable to actively participate in the sports and such a vantage point helps them feel that they are not entirely out of the picture. It is built high enough to clear the snow drifts and yet allows an unobstructed view of the area from the inside.



DIAGRAMMATIC SECTION OF LODGE DISCUSSED



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Scale 1 in. = approx. 30 ft.

The lodge is built to provide sleeping accommodations, meals, and serve as a warm shelter where skiers are able to find respite from the weather. The lodge is designed for fun and not for luxury. Appointments on the inside should be sturdy but comfortable and in line with this, prices should be kept within the means of all. Space is provided for the rental, sale, and storage of skis.

Construction of the building must be sound enough to support the heaviest snow load. This building was originally designed to support a snow load of 200 lbs. per square foot which allows a considerable safety factor.

This is an area of heavy snowfall. For this reason the lodge has been laid out as closely as possible to the highway without infringing upon the Oregon State Highway Department's 200 foot setback requirement.

Its central location provides quick access from any part of the area and the ski runs, receiving the maximum use, terminate there. The southerly exposure takes advantage of all available sunshine. The building protects the veranda from the prevailing winds, and the vital entrances are not in danger of being closed by snow drifts.

The lodge possibilities are endless and the Forest Service has many plans which might well be suited to the area. However, many were designed for the days when Civilian Conservation Corps. labor was abundant and the size and grandeur of the structure will largely depend upon what amount of money can be allocated from the Forest

Service budget for the project.

The professional services of a competent architect should be acquired **once** the general requisites for the lodge are determined. He is able to avoid many of the pitfalls which otherwise might arise and his knowledge and experience will be of great help in arriving at the final scheme of things.

EFFICIENCY  
ERASE BOND  
PAG CONTENT

## THE GAS STATION

The gas station seems necessary on the highway and should be operated as part of the resort concession. The Forest Service frowns on building commercial structures of this nature on the highway but to place it elsewhere would be impractical. The structure itself should be small and inoffensive and should probably only operate during the winter season. It should be equipped to handle the ordinary automotive failures and the sale of tire chains and other necessary items. Some sort of first aid and tow service should be available in case of emergency and it should be in touch with the lodge by telephone.

Cross-country trails are of two types, touring and "langlauf" or racing. Cross-country racing has not yet developed locally to the point where there will be an immediate interest in the sport and therefore this paper covers the touring trail in more detail.

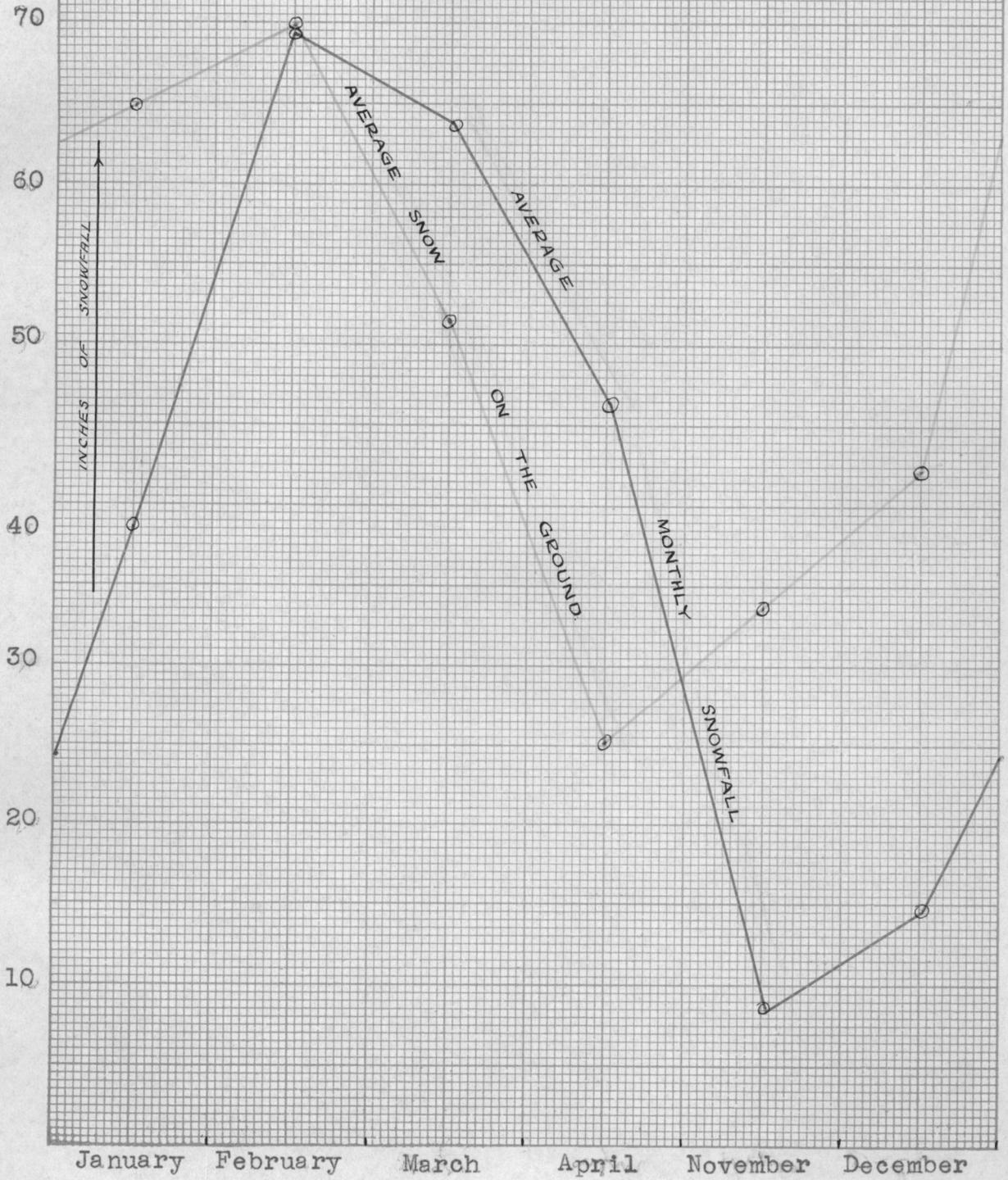
The area is exceptionally well located for cross-country skiing and there are excellent opportunities for numerous trails of varying length and difficulty.

The initial layout of the trails should be made by a reliable engineer who fully understands the construction requirements involved.

Cross-country trails should not be designed for use of the expert only as they are in the minority by far on most public ski areas. The engineer can achieve the best results by seeking the cooperation of local ski clubs and persons familiar with the country in laying out the trails and by so doing there will be no tendency to overlook the novice or average skier. However, it must be remembered that snow conditions can make the easiest trail most treacherous and for this reason it is difficult to classify all trails as to safety. All trails should be provisional in nature for the first few seasons as they may subsequently prove dangerous or inadequate, necessitating some change.

In designing the trails it is necessary to follow many rules which can only be appreciated by the proficient

GRAPH SHOWING AVERAGE MONTHLY  
SNOWFALL AND SNOW ON THE GROUND  
FROM 1935 TO 1945



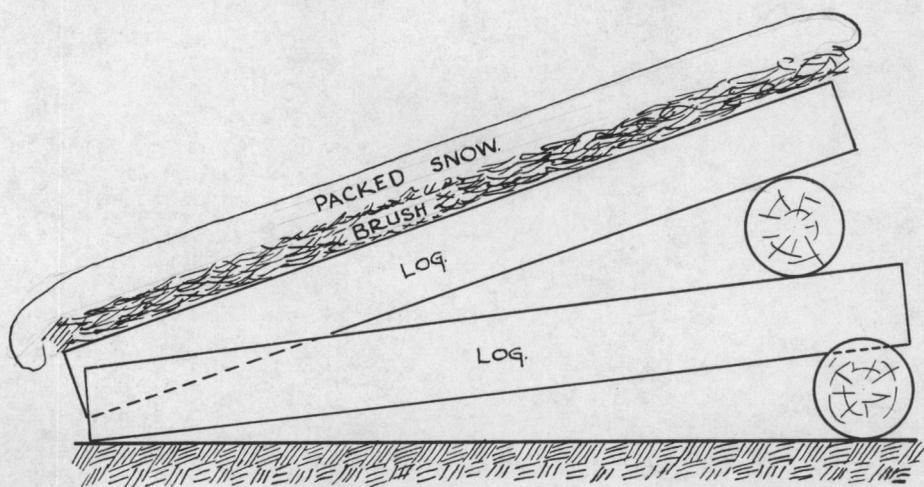
skier. The ideal trail should be designed to bring the skier up steep slopes in as easy a manner possible and should also provide excitement and take advantage of all interesting scenery where possible.

Safety is of prime importance. The trail can provide the maximum in safety to the poorest skier and still be interesting and thrilling. All planning and layout work should be done during the summer months in order to clear away all hazardous obstacles which might later be concealed by a thin layer of snow.

Definite ski engineering features should determine the location of the trail. In the West construction and maintenance costs can be extremely high and for this reason existing or abandoned logging roads and trails are often used. Trails should be laid out through scenic country and slopes should vary enough to provide interest. Again, maximum and minimum grades are to be considered in order to meet the needs of skiers of varying abilities.

Each ski trail should have a logical termini and length, width, accessibility and safety are all factors present which vary with the conditions present.

Trails should be protected from exposure to wind and sunshine and care should be taken in avoiding any risk of excessive erosion. Inspection prior to construction during the winter months is the only positive method of determining snow conditions. In this particular area the heavy snowfall insures adequate snow throughout the season and



BANKING OF COURSE

the only exception might be found on some windswept slope or exposed ridge.

Most ski facilities have little, if any, aesthetic value and consequently concealment as much as possible is important. The ski trails might well be used for other recreational purposes or for fire protection during the summer months, but nevertheless they should not mar the surrounding naturalness. The topography and timber cover will determine the cost of the trail which might be too high to justify construction. The engineer can arrive at a fairly accurate estimation by inspection of the proposed route.

Curves must be carefully planned and be wide enough so that the skiers will not have to slow up in making the turn. Banking of the curve as shown above may be necessary where high speed approaches are made and timber cut in

clearing can be used for this purpose. Logs make a solid base and they can be covered with limbs and earth taken from the inside of the curve. The butt end of all limbs should face uphill as they might otherwise prove a hazard.

Points of danger along the trails should be marked and signs at the start and finish should give the name of the trail, its character, length, and maximum grade.

First aid facilities and caches should be strategically placed and frequent checks of these items should be made by the Forest Service officer in charge.

Ski huts can be built on important ski trails to accommodate skiers where the length of the trail necessitates overnight stopping. They should be equipped with stoves, fireplaces, and bunks. Buildings of this nature have been built on the Oregon Skyline Trail between Clakamas Lake Ranger Station and Olallie Guard Station, on the Mount Hood National Forest, and on the Umatilla National Forest.

The old Salt Lake Road, which lies west of the area, parallels the Willamette Highway for fifteen miles and is suitable as a cross country trail. The Skyline Trail provides an opportunity for additional long trips either south toward Crescent Lake or north to Waldo Lake. Shorter trips are possible to Gold Lake over the Gold Lake Road which lies along the western boundary of the area. Another trip which would provide excitement and spectacular scenery would run toward the northeast and climb to the saddle between the Twin Buttes.

The possibilities are unlimited in this phase of skiing and a lot of fieldwork would be necessary in deciding which trails would serve the public to the best advantage and still remain within the allocated budget.

Cross-country skiing on glaciers and open snowfields can be very dangerous and only the expert skier in good physical form should attempt it. There are many opportunities to be found in the area for this limited group who desires untracked snow. The Diamond Peak area to the south is an outstanding example. Its northern slope is a fine downhill area and there are many opportunities for high adventure in virgin snowfields with the accompanying hazards.

## SKI CLUB SITES

Individual ski club sites are found to be desirable on any winter sports area. Four such areas linked by a summer road have been included in this plan. Ski club sites on National Forest Land relieve the District Ranger of a great deal of responsibility. These clubs teach skiing, promote safety and a knowledge of first aid and oftentimes organize ski patrols.

The site requirements of the individual clubs should be determined and a suitable building site should be included within the lot and water should be available. The sites should be more or less isolated from the public centers and a summer road should provide access.

A small slope adjacent to the site is often desirable. The size is the same as a summer home site and runs from 115 to 125 feet by 165 to 200 feet.

## PARKING AND WINTER ROADS

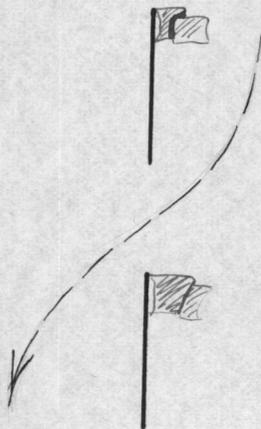
In an area of this sort automobile parking is often the major problem. The most practical and successful results have been attained by head-in parking on both sides of the highway. Such a system makes snow removal easy and has the added advantage of cheaper construction and requires fewer personnel to manage. One mile can comfortably accommodate 530 cars. This type of parking necessitates a 20 feet minimum widening of the highway on both sides.

An area equipped to handle this number of cars off the highway would present a tremendous snow clearing problem which makes it most impractical. However, some sort of winter road to the lodge is necessary for servicing reasons and to accommodate those who are unable to travel over the snow on foot. Therefore, a short access road has been included in the plans. Parking for a small number of cars in the vicinity of the lodge would accommodate small weekday crowds.

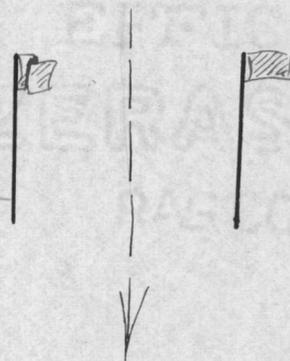
The State Highway assumes the responsibility of clearing snow from all parking adjacent to the highway but the clearing of access roads would be a problem of the concessionaire. This presents an economic reason for short winter roads on the area as only the largest resort operator could financially afford the heavy necessary equipment and labor required to keep the road cleared of snow.

The word slalom comes from two Norwegian words "to strike" and "trail" and means to follow a trail. It is a test of proficiency. The skier follows a course marked by flags and it is normally designed for the more experienced skier.

The topography in the area is not steep enough to provide a slalom course approaching championship standards. Most slaloms vary from between 600 and 1000 feet vertical drop and thirty seconds is good time for such a run with 12 or 13 flags included. A partial compensation for the lack of drop can be made by setting the flags in a closed rather than an open manner.



Closed



Open

As a rule the slalom should favor the good skier, the object being to improve the poor skiers rather than have the more advanced skier below par.

The modern course setter makes use of every variation

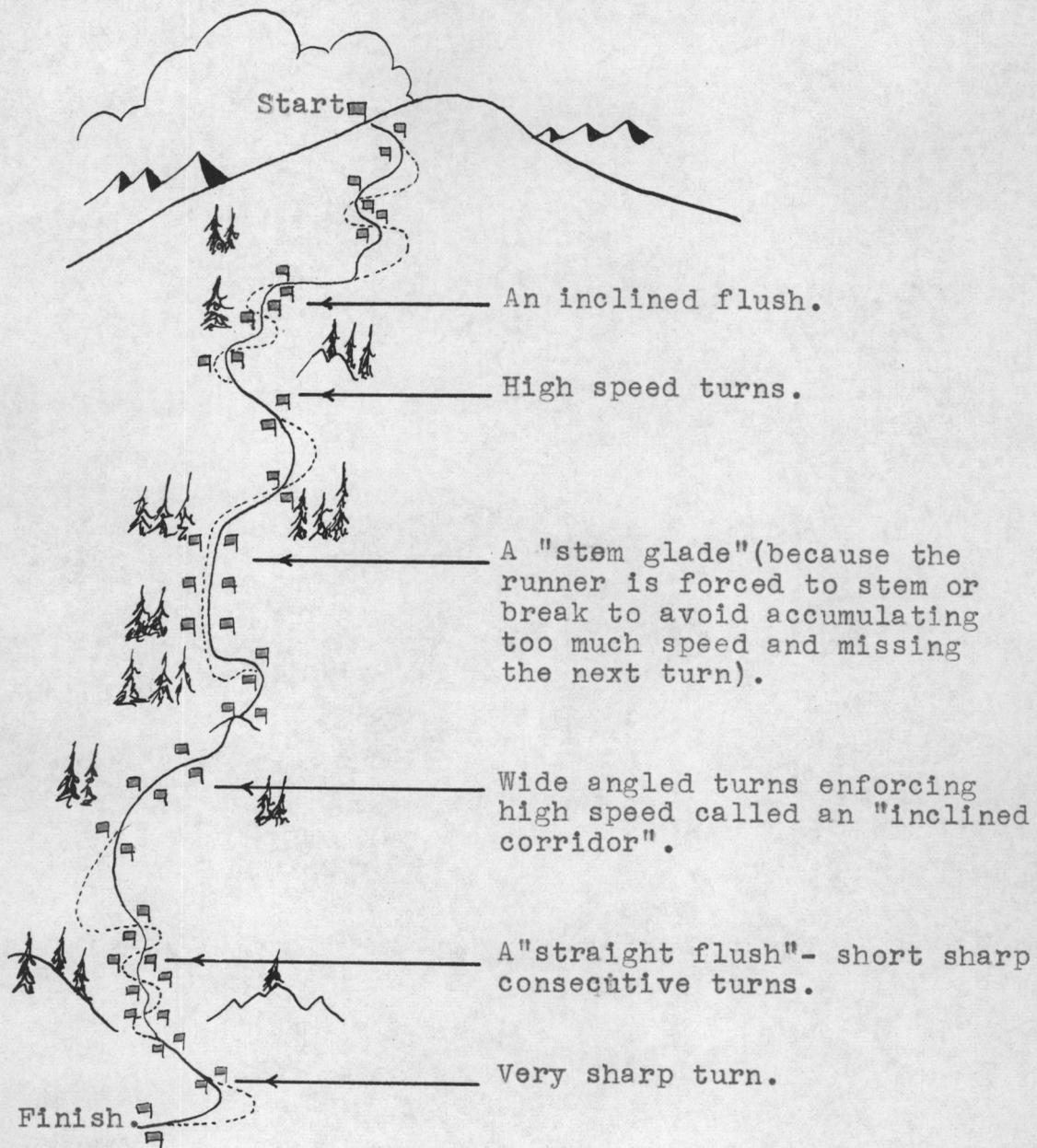


DIAGRAM OF A SLALOM COURSE.

Unbroken line-expert skier  
 Broken line -average skier

in gradient, of obstacles such as rocks, trees, gullies, dips and other natural features in order to test the skiers skill to the utmost. It is a sport which draws many spectators and it is convenient if they are able to see the whole course.

The slalom should not receive the heavy use expected of the downhill runs and for this reason it has been placed to the north of the lodge. It is readily accessible for amateur competition and spectators have but a short distance to travel from the lodge.

A portable tow could be used for days of heavy use.

## SKI JUMPS

Downhill ski running has become so popular that the possibilities in ski jumping have been overlooked. A ski jump may be anything from a windblown cornice to an elaborate tower with a graded landing slope.

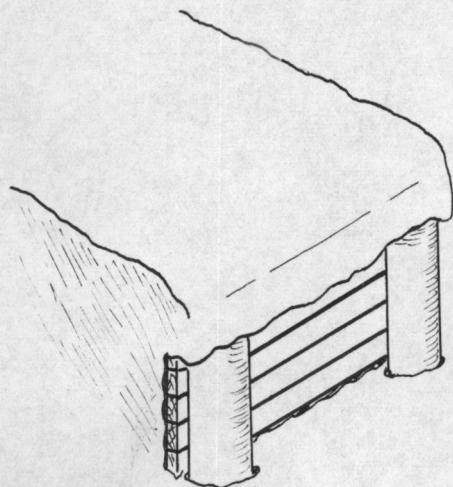
Ski jumping is more or less regarded as a spectator sport. However, there are indications of an increased interest in this phase of skiing. The 1935 report on Municipal and County Parks in the United States indicates an increase of cities (of over 25,000 population) having ski jumps as part of their recreation facilities. The figure has increased from 9 cities having 27 facilities in 1925 to 21 cities having 49 jumps in 1935. Fifteen of these cities, having 30 jumping facilities, reported 155,634 persons participating in their use.

Two jumps have been designed for the area. Their layout determines the length and style of the results.

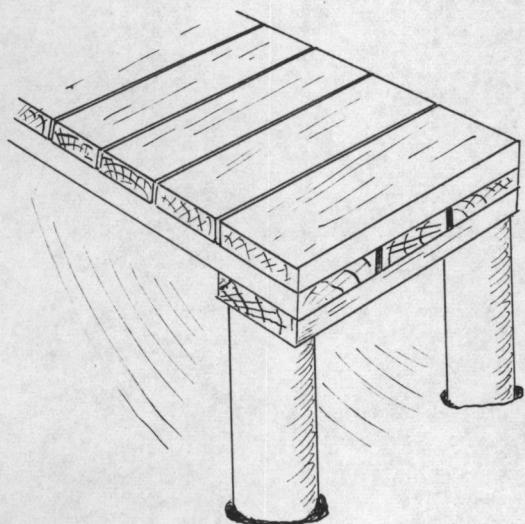
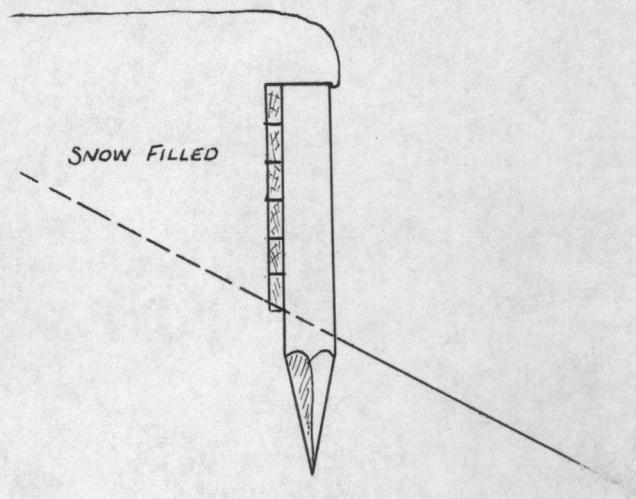
A jumping hill is made up of the following:

1. The approach
2. The takeoff
3. The landing slope
4. The outrun

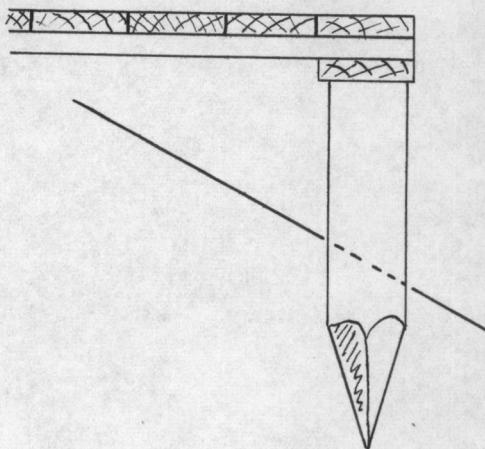
The approach should be long and steep to give the skier sufficient speed under the worst snow conditions. The slope must be uniform in length and width and must have no holes or bumps. It should be wide enough to allow the skier to make his own tracks if he so desires.



A Wall of Boards



A Platform supported by Piles



CONSTRUCTION OF ARTIFICIAL TAKEOFF.

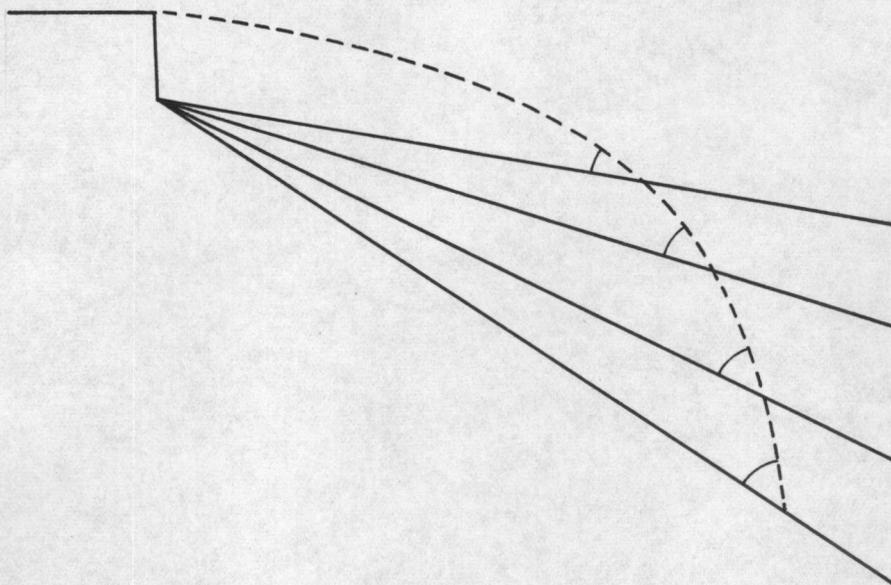


DIAGRAM SHOWING HOW THE ANGLE OF DESCENT OF A TRAJECTORY INCREASES.

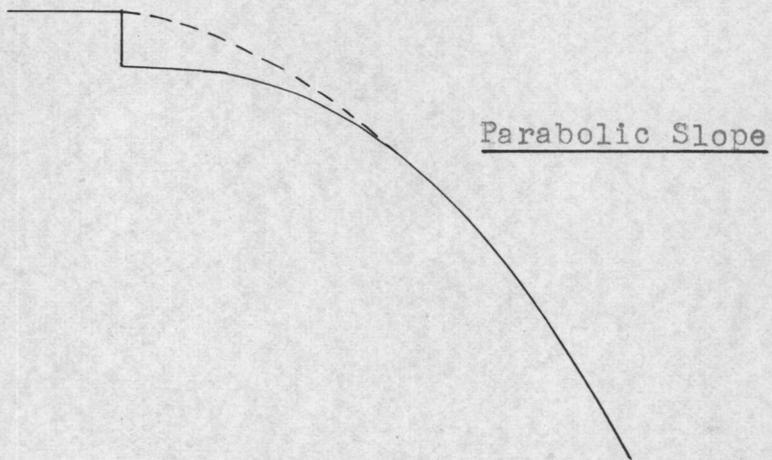
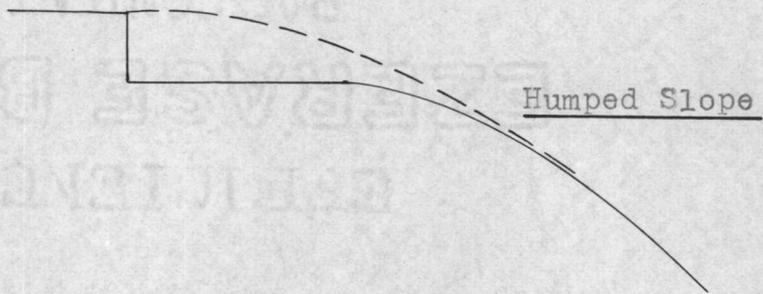
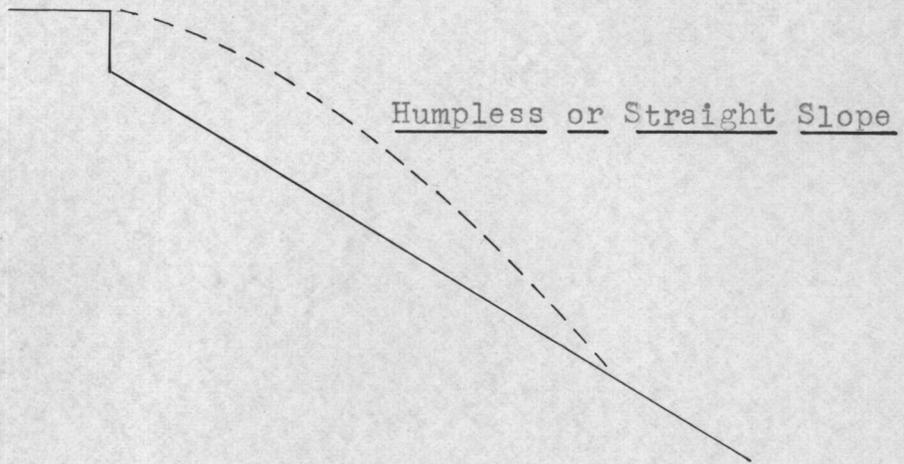
A short approach will have to be steeper than a long approach but must be less steep than the landing slope. The approach slope gradient must be constant up to within 30 yards of the takeoff where it should gradually reduce.

Artificial approaches may be constructed where other conditions are suitable.

The takeoff requires the most care in construction as it determines the jumper's trajectory. It may vary from seven to twenty-five feet in width and should merge gradually with the approach.

If the gradient is horizontal, it is called a horizontal takeoff; if the gradient slopes downward, it is called a sloping takeoff; if the gradient slopes upward, it is called a looping takeoff.

The horizontal takeoff is considered the best and



THE THREE TYPES OF LANDING SLOPES

provides the longest jump. However, on the longest jumps, requiring a parabolic landing slope, the jumper is hurled too high into the air and for this reason inclined takeoffs up to 10 percent afford a flatter trajectory.

The looping takeoff is used on small practice jumps. It throws the jumper high into the air and he lands with a jolt because of his high trajectory. The allowable tilt must be determined by the length of the jump and the gradient of the landing slope.

The landing should flare out from start to finish, from 6 to 10 yards at the top to 12 to 16 yards at the bottom. The surface must be uniform and free from bumps.

There are three types of landing slopes:

1. straight
2. humped
3. parabolic

The parabolic is much the best as it conforms to the trajectory of the jumper. The angle of impact is therefore small. Construction is usually costly and development depends upon the financial resources of the organization doing the construction.

A ski tow is the most simple form of a powered funicular. It consists of an endless, low slung cable or rope



operated by a grooved wheel which is driven by a gasoline or electric motor. Tows come in various sizes and the smaller portable forms are mounted on sleds.

In selecting the type of tow to be used one must be chosen which will carry the desired load at a suitable rate of speed. It should be the responsibility of the Forest Service to decide which type of tow will provide the fullest service to the public. The Forest Service should also set the rates as low as possible to allow the operator a reasonable profit. Permittee should carry

public liability insurance if the tow involves special risk and is open to the public on a commercial basis.

In some cases the skier merely hangs onto the rope or cable. In others, hanging ropes with or without detachable handles are furnished the skiers and spacing depends upon the load that can be carried. The return rope is usually supported by pulleys hung from poles or trees.

Comparatively tows are inexpensive and many have been constructed from discarded automobile motors and scrap material. The best tows present an incongruous sight in the timber but this is partially offset by the demand and pleasure derived from them.

The slope for a ski tow should be on a sustained grade. It should be along the borders of ski slopes and preferably be shielded by timber. Additional units should be provided if the existing tows become overcrowded as the waiting becomes tiresome.

The smaller tows are limited to approximately 800 feet but of late new designs have reached the market which are capable of much longer spans. An outgrowth of the simple tow is the "J" bar and "T" bar chair lift and most ski areas of any size now boast one or more of these facilities. They are capable of transporting skiers up much longer slopes and seem best suited to the skiers demands. Lifts are often satisfactorily used for summer tourist rides.

Most chair lifts in common use consist of a "J" or "T"

shaped chair suspended from a cable which is driven on pulleys hung from metal towers. The accompanying illustration shows a typical chair lift.

The cost of such a lift is high and only an area of heavy use can support such a structure. Initial plans should not include a lift. However, it should be considered as a potential and the area designed accordingly.

Three portable tows would be sufficient for the area covered in this paper until such time that more expensive types are justified.

The largest aerial cable car funicular ever to be built in North America is at Cannon Mountain in the White Mountain National Forest of New Hampshire. Its length is 5200 feet. The project, costing one half million dollars, was completed in June, 1939. It carries 27 persons up the mountain in seven minutes in two cars, one going up as the other comes down.

The talk of a cable car running to the top of Mt. Hood in Oregon may soon become a reality, too, but such large projects can only be tackled after a careful analysis of future expected use and sufficient evidence that the construction expenditures will be justified by "providing the greatest good to the greatest number."



A concessionaire would be unable to satisfactorily administer so large an area and control should remain in the hands of a public agency. However, the Forest Service has placed similar ski areas under permit where they contained professional ski jumps or similar enterprises. Such permits are temporary and the Forest Service protects the public to some extent by requiring the submission of a financial statement within two months of the close of each season. Such a concession, however, oftentimes does not work to the best interests of the public as the concessionaire is more concerned about financial profits than public service.

A single permit covering the lodge, service station, and ski tows should be issued to the concessionaire, preferably a public spirited organization or individual who has demonstrated an interest in public recreation in the past.

Most district rangers already have sufficient administrative work on their hands and for this reason a forest service officer should be appointed for the area and be directly responsible to the Supervisor's Office in Eugene. As the use increased the services of one or more subordinates may be needed to do a good job during days of maximum use. All personnel could assume other recreational or fire prevention work during the summer and carry out

all necessary maintenance work on the area which will include providing fuel supplies to the various warming huts.

Forest Service employees should be vested with enough power to eject any person causing a nuisance or jeopardizing the safety of others. Other duties would include the segregation of skiers of varying ability, a periodic check of trails, warming huts, toilets, parking areas, first aid stations, and caches and generally watching over the safety of the visitors.

All personnel should be proficient skiers and have a sound knowledge of first aid. They should be familiar with the surrounding country and be able to supply information to the visitors, warning them of all hazardous areas.

Last but not least, the men will constantly be in touch with the public and should therefore have a general satisfactory appearance, be able to speak reasonably well, and have a pleasing personality.

## TOILETS

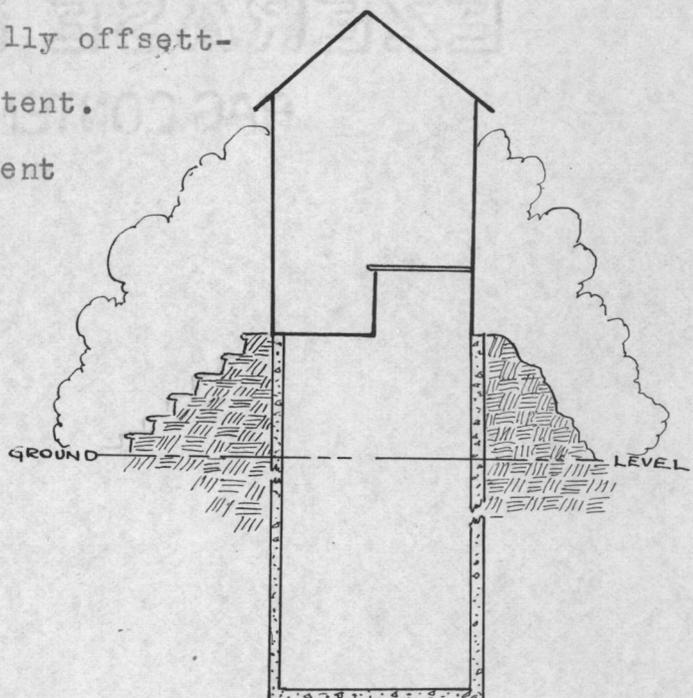
Toilets have been laid out to serve both the parking areas and the various activities. It is desirable to have flush type toilets and for this reason they have been incorporated in the warming shelters where possible. Again,



entrances should be so oriented to avoid blocking by snow and where they are included in a larger building the entrances should be from the inside.

Isolated toilets should be built up in some manner to avoid the undesirable condition shown here which exists where they are merely constructed upon the ground.

The diagram below is an obvious and inexpensive means of partially offsetting this trouble to some extent. Such a structure would present a rather grim spectacle in the natural forest surroundings, however, and it should therefore be well screened by existing or supplementary plantings.



## CONCLUSION

The design for the area is not elaborate. However, it could grow as the use increased. In the past large expenditures have been made on similar ski areas which subsequently proved inadequate for one or more reasons and the results were a total loss. Where the growth is slow the results are usually more successful.

The area is situated in country which is ideally suited to the winter sportsman and its possibilities are unlimited. Time alone will prove the wisdom of setting aside the area for this use and the health-giving and intangible benefits to the public will be immeasurable.

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