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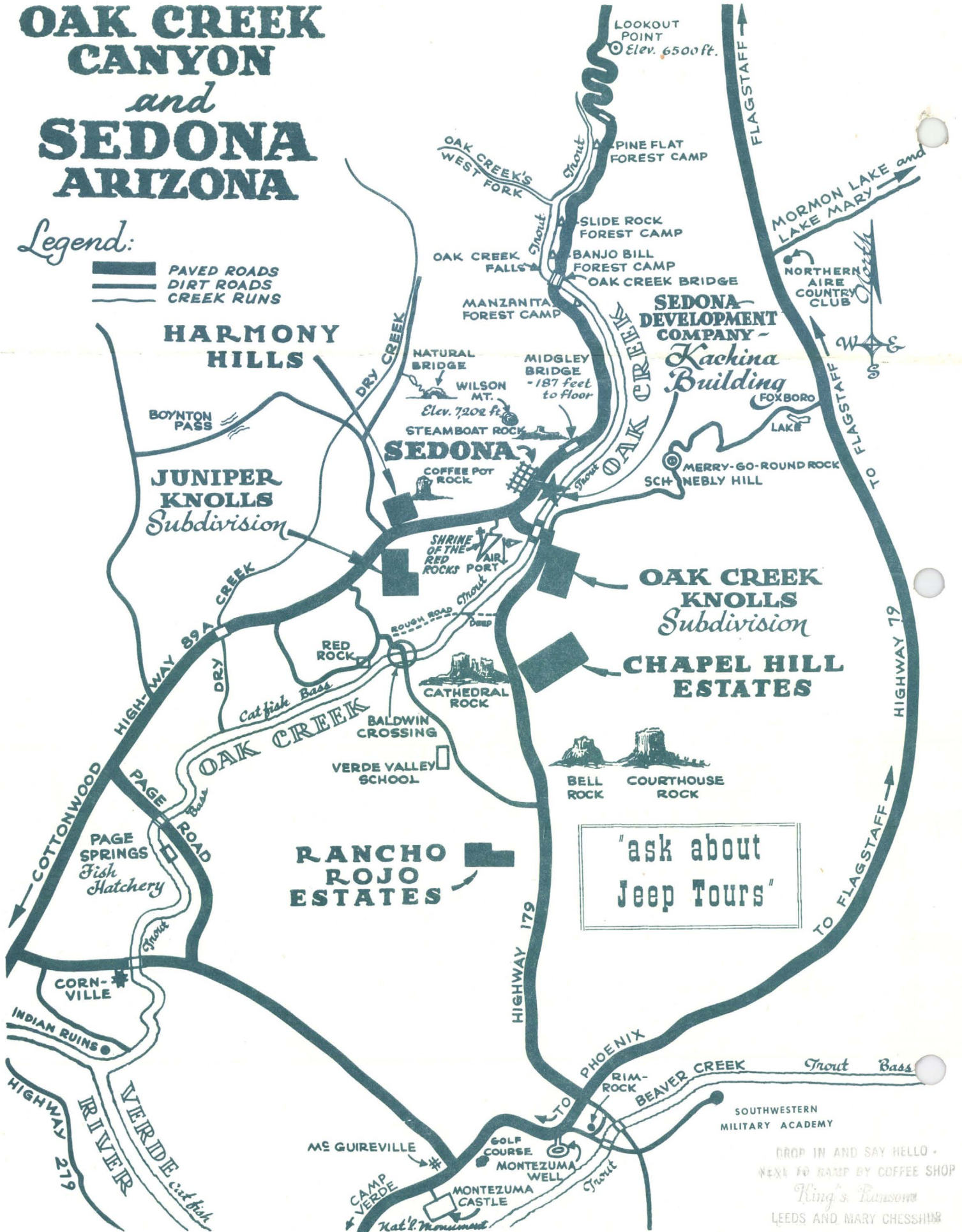
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OAK CREEK CANYON *and* SEDONA ARIZONA

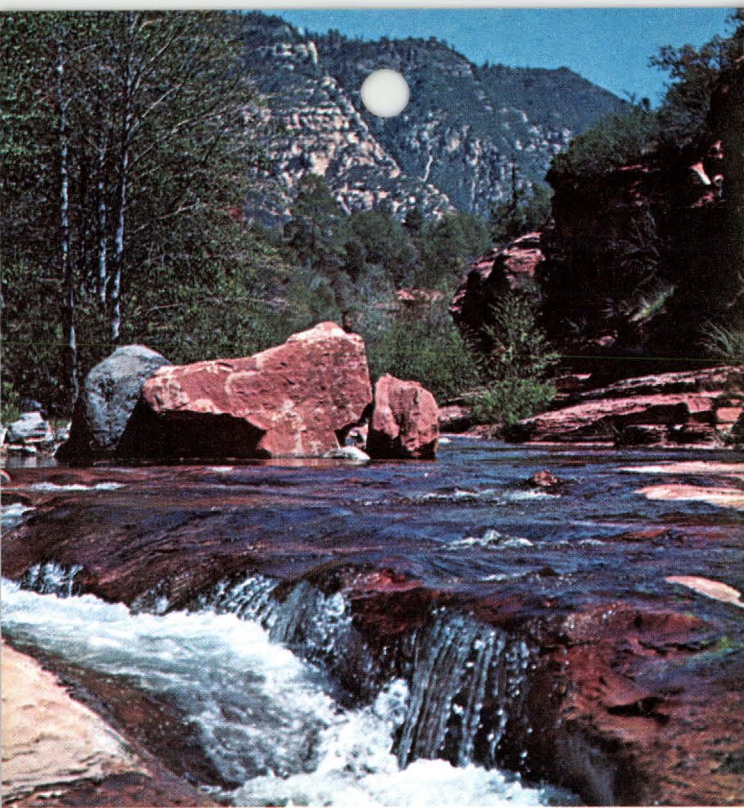
Legend:

PAVED ROADS
DIRT ROADS
CREEK RUNS

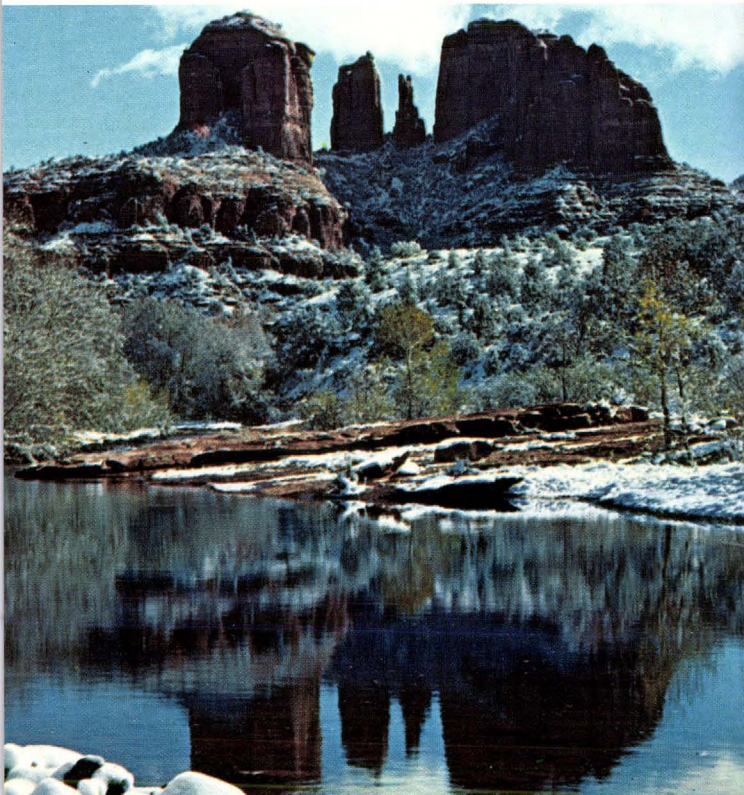


"ask about
Jeep Tours"

DROP IN AND SAY HELLO -
NEXT TO CAMP BY COFFEE SHOP
King's Ransom
LEEDS AND MARY CHESNIB



YOU ARE LOOKING FOR



In all the world, nothing quite like

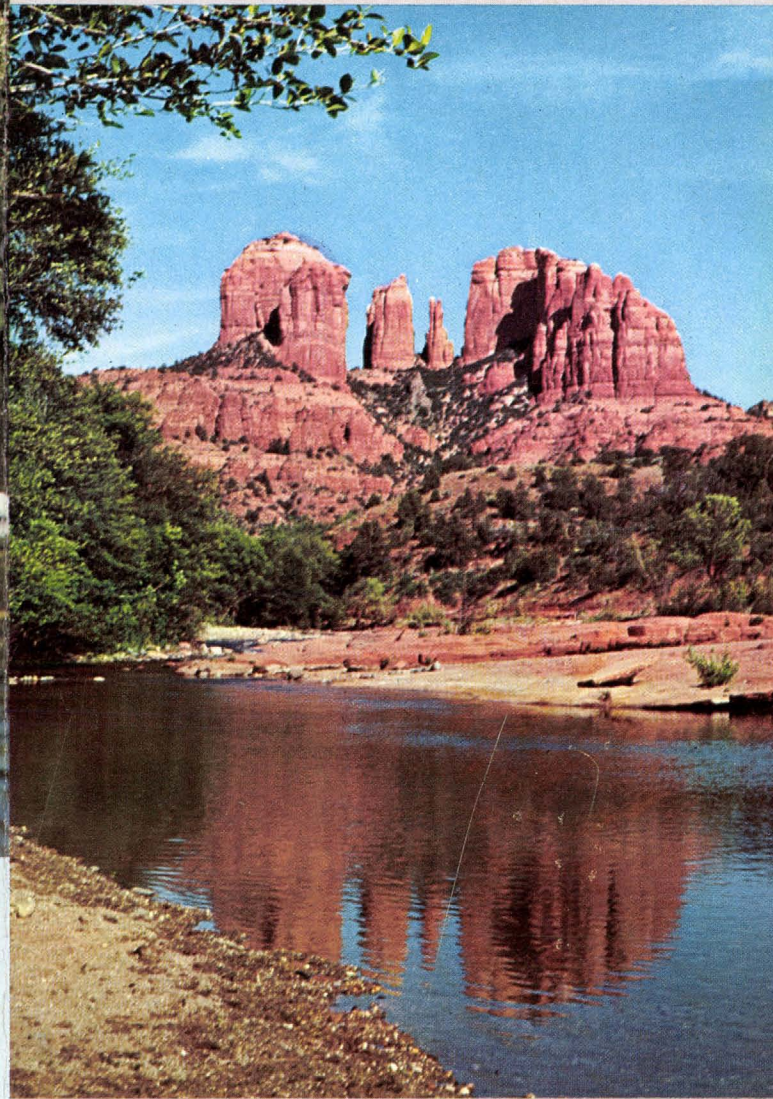
OAK CREEK CANYON

Photographer	Rugged red rocks
Fisherman	Stocked trout stream
Hunter	Abundant wildlife
Traveler	Campsites to kingly quarters
Rider	Trails or paved roads
Everyone	Four gentle seasons

Compliments
King's Ransom Motor Hotel
Sedona, Arizona

Sedona

OAK CREEK CANYON



*The Most Colorful Country
in the West*

SEDONA-OAK CREEK CANYON
CHAMBER OF COMMERCE
Sedona, Arizona



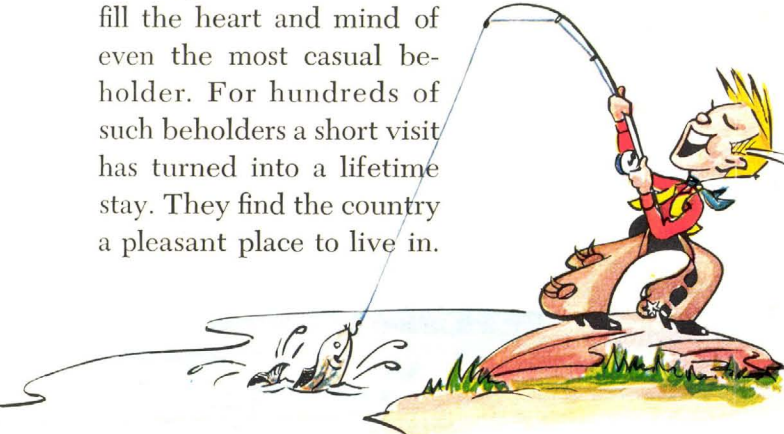
THIS IS THE PLACE



Your Vacation in the West

Many seasoned travelers familiar with the impressive beauty of such famous National Parks and Monuments as Grand Canyon, Zion, Bryce and Canyon de Chelly contend that the Oak Creek Canyon-Sedona Red Rock Country is by far the most impressive of all.

Oak Creek Canyon itself begins some twelve miles south of Flagstaff on U. S. 89A and extends for sixteen leisurely miles to the friendly community of Sedona where the canyon opens into a vast fairyland of sculptured magnificence. Steep canyon walls, drenched with all the colors of the palette and clothed in rich and varied vegetation, hem in a shining blue jewel called Oak Creek, a stream whose praises are sung far and wide by sportsmen, photographers, and lovers of the great out-of-doors. Where canyon walls are transformed as if by divine magic into the Red Rock Country of Sedona there opens up a vast panorama of startling scenic grandeur which will fill the heart and mind of even the most casual beholder. For hundreds of such beholders a short visit has turned into a lifetime stay. They find the country a pleasant place to live in.



Newcomers to the area find there a new way of life, a new design for living, unique, refreshing and incomparable. The climate is unsurpassed without extremes of summer or winter and yet with four mildly changing seasons zestful and invigorating to experience. The clear air of the Oak Creek Canyon-Sedona Red Rock Country, at an elevation from 4,300 feet to 7,000 feet, is an elixir, stimulating and healthful, free from industrial pollution, smog or dust. The area's moderate climate is world-famed.



The community of Sedona is not only friendly but modern in every way. The 5,400 folks living there find every convenience and service that can be offered by the largest metropolis for making living pleasant, comfortable and easy — lacking only the frustrations that make big city life increasingly nerve-shattering and maddening to so many people these days. Excellent accommodations are available all the way from the upper end of Oak

Creek Canyon to Sedona and environs.

It's a friendly country and the people in it are friendly, readily and gladly sharing the blessings the Creator has bestowed upon them. There is no such thing as a stranger in this heart of the scenic West. Here is the West at its most wonderful and charming best. Here is found a way of life wonderfully relaxed, delightfully informal, in a setting beyond comparison. It welcomes the visitor in a warm embrace.

RAYMOND CARLSON
Editor, Arizona
Highways Magazine



Oahat

DESERT SURVIVAL



**INFORMATION FOR
ANYONE TRAVELING IN THE
DESERT SOUTHWEST
1962**

MARICOPA COUNTY - CITY OF PHOENIX
CIVIL DEFENSE JOINT COUNCIL
2035 NORTH 52ND STREET
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throughout the body, extremities become cramped, abdomen rigid, nausea, headache, pupils dilate, and there may be spasms after several hours.

Giant Hairy Scorpion, Tarantula, Desert Centipede, Vinegarone, Wasps, Sunspider: These are not considered to be dangerous even to children, although the bite may be painful.

Prevention and First Aid: When in areas where these creatures are known to be, carefully check bedding before using. Check clothing, socks and shoes that are on the ground or floor during the night. Dampness seems to attract these creatures. If bitten, (stung) apply a string or other material tourniquet just above the site of the bite. Remove in five minutes. Apply ice, if you have it, to the area of the bite for several hours.

The use of ethyl chloride or other pressurized liquid coolant instead of ice is practicable. Be sure to use a patch of cloth over the skin to avoid freezing the surface tissues.

Get to a doctor immediately, especially if the person is a child, is elderly, has a heart condition, or has been bitten several times or on the main part of the body.

We have taken pleasure in preparing this manual for you, and hope that in this small way we will add to your enjoyment of our Desert Southwest, and help to assure a safe return from your adventures.

6. Keep the patient comfortably warm during the first 24 hours. After this, until the treatment is discontinued, keep the patient warm to the point of mild perspiration. Unless this is done, tissue destruction will not be prevented.

Coral Snakes: These are small snakes generally shorter than 18 inches in length, with a small tapering head and blunt tail. The wide red and black bands are separated by narrow yellow bands and all completely encircle the body. The snake bites rather than strikes and is normally slow and quiet in nature. Due to the small mouth and the short, fixed, rear-positioned fangs it has difficulty in biting any but the smallest extremities. The venom is neurotoxic, causing failure of the nervous system. There are no data on bites by this snake on humans in the southwest. Use the treatment for rattlesnakes, and get a doctor.

Gila Monster: Our only poisonous lizard; due to the limited number it is protected by law. The bite is poisonous (but the breath is not). They are less than 22 inches long with a beaded skin, black and coral colored. They are normally sluggish but can swap ends and snap very rapidly. The venom is carried from glands by grooved teeth. The venom causes local swelling, paralysis of the respiratory and heart muscles. If bitten, grab by the tail and yank. The teeth are not set in sockets and will come out readily. Use treatment for rattlesnake, and get to a doctor as soon as possible.

Poisonous Insects and Spiders: Normally there are only two kinds of potentially dangerous insects in this area, the small rock or bark scorpion and the black widow spider. The bites or stings of other insects may be painful but not dangerous for the normally healthy person. There is, of course, the danger of infection from all bites. If swelling is present as a result of a spider or insect bite, there is normally nothing to worry about. The opposite is true of snake bites.

Rock or Bark Scorpion: Small, slender, light straw colored, with the stinger in the tip of the tail. May be dangerous to small children, to elderly people or those with heart ailments. Healthy adults usually have little serious reaction. There will be pain at the site of the sting, numbness, restlessness, high temperatures, fast pulse and breathing difficulty.

Black Widow Spiders: Shiny black with a red hour glass marking on the underside. Found under logs, rock piles, dark corners of sheds and out buildings. It will bite if provoked, and can be dangerous to all ages, but is usually not fatal. Pain spreads

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A WORD OF CAUTION: The desert is beautiful and deadly. Danger is always present once you leave well-traveled roads. It is not only strangers and Sunday sightseers who have found this to be true. Many native-born Arizonans have been careless and paid the consequences. The information in this manual may save your life.

FOREWORD

For several years the Maricopa County-City of Phoenix Civil Defense Joint Council has published information on Desert Survival. The purpose of this manual is to help people feel at ease in their environment and to increase their chances of survival if circumstances should demand it. Some of the information refers also to the higher elevations; there is no fine line between desert and mountain emergencies.

Family and National survival should also be a matter of concern to all of us. Your local Civil Defense organization encourages you and your family to prepare for natural or National emergency. Survival in any situation of stress may depend upon an individual's resourcefulness or upon his ability to cooperate with others. It is most important that you learn:

- a. Attack Warning Signals and their meanings
- b. Use of CONELRAD radio—640 & 1240—for official directions
- c. Medical Self Help and emergency family action
- d. Radio-active fallout and shelter
- e. Your community plan for emergency action

You are encouraged to maintain in your home, a two week's level of food supplies and water, a first aid kit and a battery radio.

Additional information may be obtained by writing or telephoning the Civil Defense Joint Council.

We are grateful for the assistance given by the following in the revision of this manual: Dr. Herbert L. Stahnke, Ph.D., Head, Division of Life Sciences, Arizona State University, Drs. Gordon L. Bender, Arthur E. Dammann and Chester R. Leathers, Arizona State University, Mr. W. H. Earle, Director, Phoenix Desert Botanical Gardens, and Mr. Maurice Bradford, Horticulturist.

Edited By

LOUIS E. RONINGER, Lt. Col., AUS (Ret.)

Training and Education Coordinator

which they use to move over sandy areas. A rattlesnake strikes by extending the neck and forward body loops and can strike a distance of about one-third of the total length. The poison is injected by two fangs which are extended forward by the wide opening of the mouth during the forward movement. The poison is hemolytic, destroying the blood. Therefore it can be seen that when bitten, exertion and stimulation are to be avoided! Swelling will be present. When traveling where rattlesnakes are known to be active wear protective footgear, (most snakebites are in the lower calf and ankle) and watch where you step and place your hands.

First Aid: If you are in the field, use the incision and suction method. Your snake bite kit, the American Red Cross First Aid Manual and others have detailed instructions. Remember that the fangs enter on an angle. Try to visualize this angle when making the incisions, as these are of little value if they do not pass through the length of the punctures. Make the longer incision in the direction of the tissue and the shorter cross incision at right angles to it. This will prevent doing so much damage to muscles, main blood vessels, etc.

If you are where ice is available use the Stahnke Ligature-Cryotherapy method as follows:

1. Place tourniquet made of string, a shoelace, thread, etc., at once between the site of the bite and the body, but as near the point of entrance of the venom as possible. Tighten only until pain is first experienced.
2. Place a piece of ice on the site while preparing a suitable vessel of crushed ice and water.
3. Place member in the iced water well above the point of bite.
4. After the member has been in ice water for not less than five minutes, remove the tourniquet but keep member in the iced water for at least two hours.
5. Pack member in finely crushed ice for a minimum of twenty-four hours. The bite of a snake having a length of four feet or more may require three or more days of this treatment. **Ice bags are not adequate**, and the ice must not be permitted to melt away from the body surface. If the bite is situated near the center of the body or the point of attachment of a limb, the entire limb and body area to well above the site of the bite must be packed in ice.

Cooking: The methods of cooking over an open fire are many, the main limitations being available equipment, the available food, and the ability of the cook. All methods of cooking, boiling, frying, broiling, roasting and baking may be employed. The techniques are too lengthy to describe here. The many books on camping are full of suggestions, as are some of the pamphlets on use of aluminum foil. Foil affords an easy way of cooking. Wrap the prepared food inside, double fold the edges leaving some air space inside and place on coals. Meats, vegetables, fish, sandwiches, and other dishes may be cooked or heated in this manner. You **can** boil water or make soup in a cardboard, bark or other container of flammable material, provided you use a low fire and keep liquid inside of the container. The part of the container above the water line may burn if not kept moist.

POISONOUS CREATURES

There is probably more said and less truth about poisonous creatures than any other subject. These animals and insects are for the most part shy or due to their nature, not often seen. Therefore any person who has the fortune or misfortune to become acquainted with them becomes an expert, and in due course, the stories told become a bit distorted. Like gossip, the final tale seldom resembles the original fact. Learn the facts about these creatures and you will see that they are not to be feared but only respected. Visit the museums which have displays, dead or alive, of the creatures—avoid the roadside zoos with their sensational imports if you are looking for facts.

Snakes: There are many types of snakes in the southwest, but only rattlesnakes and coral snakes are poisonous. Snakes hibernate during the colder months, but will start appearing when the warming trend starts, sometimes in early February. During the spring and fall months they may be found out in the daytime, but during the summer months they will generally be found out during the night, due to the fact that they cannot stand excessive heat.

Rattlesnakes: These are readily recognized by the sandy color, the broad arrowshaped head, the blunt, tipped-up nose, and the rattles at the tail. They do not always give a warning by rattling, nor do they always strike if you are close. If you are making some noise when moving, they may attempt to crawl away or may remain still and hidden. Generally they are not aggressive, and will not "chase" you. They may be found most often around food and water sources, irrigation ditches, springs, water tanks, brush piles, etc. The sidewinder is a small rattlesnake found in desert areas. They get their name from the peculiar side looping method

CONTENTS

GENERAL	1
TRAVEL	1
Pathfinding	1
Walking	2
Automobile Driving	3
Aviators	3
Direction Finding	4
Use of the Compass	4
Determining Direction Using Watch	4
Determining Direction from the Stars	5
Determining Direction from Nature	5
Navigational Hazards	5
Signals	5
CLOTHING AND EQUIPMENT	6
Clothing	6
Equipment	7
Survival Kit	7
HEALTH HAZARDS	9
WATER	10
Water Requirement Charts	10
Dehydration	11
Symptoms of Dehydration	12
Prevention of Dehydration	12
Ration Sweat, Not Water	12
Carrying Water	13
Finding Water in the Desert	13
Methods of Purifying Water	14

FOOD	14
Food List	15
Survival Rations	16
Edible Wildlife	16
Preserving Surplus Meat	18
Snares, Traps, Deadfalls	18
Edible Plants	19
Poisonous Plants	20
FIRES AND COOKING	20
Cooking	22
POISONOUS CREATURES	22
Snakes	22
Rattlesnakes	22
First Aid	23
Stahnke Ligature-Cyrotherapy Method	24
Coral Snakes	24
Gila Monster	24
Poisonous Insects and Spiders	24
Rock or Bark Scorpions	24
Black Widow Spiders	24
Giant Hairy Scorpion, Tarantula, Desert Centipede, Vinegarone, Wasps, Sunspider	25
Prevention and First Aid	25

fashion to prevent smothering your starting fire and aid in the formation of an up-draft. After the fire is burning well, continue to use the tepee method for boiling but criss-cross fuel for forming coals for frying or broiling.

Start your fire with a lighter, matches, or a hand lens. If you have time practice the art of making a fire using flint and steel. Remember do not use up your water-proofed matches unless your return from the field is a guaranteed fact. Here are some hints on expedient fire building:

Tinder: (all these must be **dry**) Under-bark of the cottonwood, cedar bark, dead golden rod tops, cattail floss, charred cloth, bird nests, mouse nests, or any readily flammable material shredded into fine fibers.

Fuzz-stick: Cut slivers into soft wood sticks so that they adhere to the stick. Arrange them tepee fashion, with the separated ends downward.

Quick, hot fires: Cottonwood, cactus skeletons, greasewood, aspen, tamarack, cedar, pine, spruce.

Long lasting fires: Mesquite, ironwood, black jack, sage, oak.

Flint and Steel: A practical method if you practice. Strike steel against flint or agate, so that the sparks hit the tinder. Hold flint against tinder to catch spark then very carefully blow into flame.

Friction Methods: The Navajo hand drill and fire plough methods should be learned, but require proper materials and much practice. Material for Friction Method of Starting Fires: Yucca, cottonwood, tamarack, cedar, willow, elm, fir.

Gun Powder: Remove bullets from two cartridges. Prepare a hole in the ground about 8 inches deep and 4 inches across. Place tinder in the hole and empty one cartridge case of powder into the tinder. Load the other case into rifle, being careful not to dump the powder out, hold the muzzle about 4 inches from the tinder, and fire the gun. The flame will ignite the powder in the hole and the tinder. Have all your fuel ready to add. Do not use this method if your cartridges are limited, or you may have fire but go hungry. Do not attempt to start the fire without a suitable hole and tinder as the blast will blow away the material.

REMEMBER, YOU WANT FLAME FOR HEAT, EMBERS FOR COOKING, AND FOR SIGNALS YOU NEED SMOKE IN THE DAYTIME AND BRIGHT FIRE AT NIGHT. BE SURE TO EXTINGUISH YOUR FIRE BEFORE LEAVING IT.

Other edibles are the fruits of: the tomatillo or squawberry, a stiff thorny bush with small berries which are rather citric-tasting and much liked by birds; the hackberry, a small tree with tiny, thick-growing roundish leaves and small red berries; Jojoba (the goatnut or wild hazel) is a smallish shrub, with thick-growing evergreen, leathery, gray-green leaves and bitter but edible acorn-like nuts which were once a staple food of the Indians.

Acorns, dandelions, lambsquarters, nettles(young), miner's lettuce, cattail (boil or roast stalks), pinon nuts, pine kernal, water cress, bark of the aspen or cottonwood, or pine and spruce are all edible. Dandelions, lambsquarters, and nettle should all be cooked if possible. Yucca flower buds are tasty if boiled.

Poisonous Plants: Avoid plants with a milky sap. If you cook a strange plant it is best to test it first by holding it in the mouth for a few minutes. If it has a disagreeable taste, (very bitter, nauseating or burning) don't eat it as it may be poisonous. All red beans are dangerous. Do not eat the following:

1. **Coral Bean:** Medium sized shrub recognized in early summer by its leafless branches and bright red flowers, in midsummer by its small triangular leaves and in late summer and fall by the thick pods (6-10 inches long) with the bright red seeds. Usually found at elevations around 3,000 to 5,000 feet.

2. **Milkweed:** This has a milky sap, the stems are rush-like, in cluster, leaves are short-lived, flowers are cream color to dull yellow. Grows on rocky slopes from sea-level to 2,500 feet elevation. Milkweed stems are not jointed like the ephedra (Mormon Tea or Mexican Tea).

3. **Jatropha or limber bush:** Found on rocky slopes at 2,000 to 3,000 feet elevation. Low shrub with heart-shaped triangular leaf blades and flexible branches. Sometimes called "sangre de drago" because of the reddish tannic sap of the roots. The seeds are laxative.

4. **Solanaceae or nightshade:** Resembles the tomato or potato plant. The deadly nightshade is a low shrub with grayish leaves, purple flowers, and yellow fruit which turn purple as they ripen. Resembles the tomatillo.

FIRES AND COOKING

Clear an area about 15 feet across, dig a pit or arrange rocks to contain the fire. Make a starting fire of dry grass, small twigs, shavings, under bark of cottonwoods, etc. Place larger twigs—about pencil size on top. Have heavier material ready to add, using the smaller pieces first. Place them on the fire in a "teepee"

GENERAL

The Desert Southwest is characterized generally by high evaporation, a low annual rainfall, a scarcity of water, sparse vegetation, a wide temperature range and brilliant sunshine. Some areas are flat and sandy, some mountainous and rocky, and others may be salt marsh or dunes. As opposed to the normally thought of summer conditions of extreme heat and severely parched character, the balance of the year affords usually moderate temperatures, and especially in the spring, a surprising amount of life and color. The desert supports a large variety of animal and plant life, although for the most part it is diminutive in size or modified due to its adaptation to the environment.

TRAVEL

Travel in the desert can be an interesting and enjoyable experience or it can be a fatal or near fatal nightmare. The contents of this small manual can give only a few of the many details necessary for full enjoyment of our desert out-of-doors. Much more must be learned of the basic principles of outdoorsmanship and self-reliance, and there are many sources awaiting to be tapped of their information. The Boy Scouts of America, The Girl Scouts, Camp Fire Girls, The American Red Cross, The National Rifle Association, The National Field Archery Association, The Arizona Game and Fish Department, The Phoenix Desert Botanical Gardens, and many more, offer information or services which will be useful to you. Unlimited satisfaction awaits the person who is willing to take advantage of the desert and **who prepares himself** for this unusual environment.

ALWAYS BEFORE GOING INTO THE DESERT, INFORM A RELATIVE OR NEIGHBOR EXACTLY WHERE YOU ARE GOING AND WHEN YOU WILL RETURN.

Pathfinding: When you plan on going into strange country obtain a map beforehand and study the terrain features, the road structure (do the roads run mainly north and south, or east and west?), the directions to the nearest habitation, location of water, etc. When you arrive at your campsite, recheck your map, look for landmarks and orient yourself with the prominent ones. As you move through the country check your back trail often, making mental pictures of the land behind you—this is what you will be looking for when you return to camp. Take into consideration the position of the sun and shadows, and where they will be at the time you expect to return. Stay on established trails, if possible, or mark your route by blazes or other marks. Make a blaze

by a single downward chop with a hatchet or heavy knife on a thin-barked tree or by one downward and one upward stroke on a thick-barked tree to expose the light wood. Make bush marks by breaking over the top leaving it attached by the bark. Make other marks by aligning stones to form arrow shapes, or by slanting sticks into the ground in the direction that you are going. Travel from one prominent point to the next, making a direction mark at every stop.

If you think you are lost do not panic. Sit down for awhile, survey the area and take stock of the situation. Try to remember how long it has been since you knew where you were. Decide on a course of action. It may be best to stay right where you are and let your companions or rescuers look for you. This is especially true if there is water and fuel nearby, or if in winter, if there is some means of shelter. Once you decide to remain **do not move**. Make a fire—a smoky one for daytime and a bright one for the night. Other signals may be used, but fire is by far the best.

If you feel, after thinking the situation over, that you can retrace your course, do so. Mark your spot or leave a note before moving on. Look for tracks, you may be able to back-track and find your way to familiar ground. Do not try to take short cuts as this may tend to further confuse you. If possible, climb a tree or a high point and make a sketch of the area before moving. Always move down stream or down country, but travel the ridges instead of the washes or valleys. Make marks as you go. Travel by landmarks or compass and do not try to move too fast.

REMEMBER, MOVE WITH A PURPOSE, NEVER START OUT AND WANDER AIMLESSLY.

Walking: There are special rules and techniques for walking in the desert. By walking slowly and resting about 10-20 minutes out of each hour a man in good physical condition can cover about 12-18 miles per day at the outset—less after he becomes fatigued or lacks sufficient water or food. Consider walking at night. It is cooler and if water is a problem you will dehydrate less. You can navigate by the stars. The disadvantages are that you cannot see as well and may stumble, or you might overlook water and food sources and indications of habitation. On the hot desert it is best to travel before 10:00 a.m. and after 6:00 p.m., spending mid-day in whatever shade may be available. The position of the sun early and late in the day will give a better sense of direction. In walking, pick the easiest and safest way. Go around obstacles, not over them. Instead of going up or down steep slopes, zigzag to prevent undue exertion. Go around gullies and canyons instead of through them. Use a steady easy step. When going down hill, bend

Set snares in game trails or frequently used runways which can be recognized by fresh tracks and droppings. The spot used for butchering will attract other animals and will be a good place to watch for a day or so. Use entrails for bait. Place the snare in the narrowest part of the trail, or arrange obstacles to force the animal to pass through the snare. Disturb natural surroundings as little as possible. Be sure the noose is large enough so that the head but not the body of the animal will pass through.

Edible Plants: A visit to the Phoenix Botanical Gardens in Papago Park will afford you much interesting information regarding desert plants.

The main edible plants are the fruits of cacti and legumes. All cactus fruits are safe to eat. In the summer the fleshy and thin-walled ripe fruits can be singed over fire to remove spines. Then they can be peeled and eaten. Old cactus fruits contain seeds which can be pounded between two stones into a powder and eaten, or mixed with water into a gruel called pinole. New young pads of the prickly pear can be singed, peeled and boiled.

The legumes are bean bearing plants, the main ones being mesquite, palo verde and ironwood. Mesquite and palo verde are distinguished by feathery, fern-like leaves and grow into small trees. The palo verde is recognized by its all-green bark leaves. Ironwood, which has a small $\frac{1}{4}$ " leaf and dense growth, makes a large tree in favorable conditions. Other legumes are the acacia, also feathery-leaved, and the catclaw with its grayish appearance and recurved thorns. The bean pods of all legumes, when green and tender, can be boiled and eaten. When mature and dry the beans have to be pounded, because, like cactus seeds, they are too hard to chew.

The night blooming cereus, which looks like a cluster of weather beaten sticks and is usually found close to trees and bushes, has a very large, edible, rutabaga-shaped root. Slice the root and fry. This root also has a very high moisture content, and may be used as a water source.

Century plant (mescal) roots take a long time to cook but the plants have a wide range and justify mention. Campers want to try this old time favorite of the Indians. Cut off all the leaves and dig up the celery-root-shaped "cabbage" that remains. Dig a large pit, line it with stones and build a hot fire in it. After several hours, when the rocks are thoroughly heated, put the century plant "cabbage" in the hole, cover with branches and dirt, and allow to cook for at least 24 hours. After removing from the pit it has to be pounded to soften the fibers and to extract the juice, then eaten or dried for storage. The flowering stalks are also edible after roasting.

28. **Bullfrogs:** Skin before cooking.

29. **Snakes:** Most snakes are edible. Rattlesnake is especially good. Remove the head to prevent coming in contact with the venom. However, leaving the head on is not detrimental to the eating qualities.

30. **Lizards:** Many species, all believed edible, including the poisonous Gila Monster.

31. **Desert Tortoise.**

32. **Lubber Grasshopper:** 2½ inches long. Should be cooked.

33. **Grubs:** Found under bark, in rotten wood or in the ground. Boil or fry.

34. **Hairless Caterpillars:** Hairy ones may be poisonous.

Preserving Surplus Meat: It is surprisingly easy to preserve surplus meats in the desert southwest because of the bright sun and dry heat. You can make **Charqui** (Jerky) from fat free meat of large animals, by slicing it into strips about 1 inch thick by several inches wide, and hanging it in the sun for two or three days until it is completely dry. May be eaten dry or soaked and cooked. Will keep indefinitely. **Sand dried meat** is similarly stripped, then wiped dry, and buried unsalted in dry sand about 6 inches deep. If kept dry will keep for several years. Eat dry or soak and cook. **Smoke drying** is also simple. Build a lattice about 3 feet above a slow burning fire, lay ¼ inch thick strips of meat on the lattice. Smoke until the meat becomes brittle. Do not let the fire become so hot that the meat cooks or draws juices—the smoke does the trick. Do not use pitchy or oily woods as they will flavor the meat.

Snares, Traps, Deadfalls: Learn to design and use these from books on Woodcraft. Most are simple devices which require only ingenuity, a pocket knife, a bent nail and a piece of string. You will have these things in your survival kit—or you may have to improvise. Snares should be placed after camp is set up but before dark. A twitch-up snare jerks the animal into the air, kills promptly and protects it against other animals. A noose of string laid around a hole or burrow can be jerked by hand as the animal puts its head out of the hole. Conceal yourself some distance away so that the animal in the hole cannot see you. Deadfalls are traps which allow a heavy object, log or rock to drop on the animal when a trigger is released. Any sized animal may be killed by this method if the trap is large enough. Slings or slingshots may be used to kill birds or small animals. A handful of pea sized rocks flung by hand may get a bird as a last resort.

the knees considerably. When climbing, place the whole foot on the ground at one time, not the heel alone. When walking in sand, lean well forward, keeping the knees bent. On walks of long duration do not swing the arms, but grasp the shoulder straps of your pack or the shirt at the shoulder seams to prevent the hands and lower arms from swelling, and creating undue fatigue. When walking with companions, adjust the rate to the slowest man, keep together but allow about 10 feet between members.

At rest stops, if you can sit down in the shade and prop your feet up high, remove your shoes and change socks, or straighten out the ones you are wearing. If the ground is too hot to sit on, no shade is available, and you cannot raise your feet, do not remove your shoes as you may not be able to get them back onto swollen feet. However, unlace boots, adjust socks and relace.

Automobile Driving: Cross country driving or driving on little used trail roads is hazardous, but can be done successfully if a few simple rules are followed. Move slowly. If in doubt of the terrain, dismount and check it out first on foot. Do not attempt to negotiate washes without first checking the footing and the clearances. High centers may rupture the oil pan. Overhang may cause the driving wheels to become suspended above the ground. In marsh or sand, the wheels may sink in creating a high center thereby losing traction. Do not spin wheels in an attempt to gain forward motion, but apply power very slowly to prevent wheel spin and subsequent digging in. When driving in sand or snow, traction can be increased by partially deflating tires. Drive slowly on low tires. Do not remove so much air that the tire may slip on the rim. Start, stop and turn gradually, as sudden motions cause wheels to dig in. If you plan on driving in the desert, practice "difficult traction" in a dry wash with another car standing by to tow you out if you become stuck. Experiment with the various footings. There are certain tool and equipment requirements if you intend to drive off the main roads: one or more shovels, a pick-mattock, a tow chain or cable, at least 50 feet of 1 inch manila rope, tire pump, axe, water cans, gas cans (both filled), and, of course, your regular spare parts and auto tools. Be sure that your car is in sound condition with a full gas tank, a filled clean radiator, a filled battery and new fan belts.

Aviators: Be sure to file a flight plan before flying cross country. When flying across the desert be sure that you have with you a survival kit and clothing suitable for ground conditions. If you have difficulty, a crash landing is preferable to parachuting, as you will have trouble locating the plane later. Land before you are completely out of gasoline—dead stick landings in desert terrain are dangerous. Also you will have gasoline with which

to build signal fires. Build fires well away from the plane—remember the gusty desert winds. It may be best to remain at the plane instead of trying to walk out. You can survive longer without water in the shade of the plane's wing than you can by exhausting yourself walking. Walk out only if you are sure you can reach help easily, and are absolutely sure that you have enough water to make it. If you decide to walk, make a careful plan, and follow the pathfinding instructions.

Direction Finding: Haven't you awakened in a strange area to find that you are "turned around"? The sun does rise in the east and set in the west regardless of your first impressions. If you stand with your right hand to the morning sun and your left hand to the evening sun, you will be facing North. When first arriving in new country look around, study the land masses, and fix the directions well in your mind. When moving through new country continue the practice of fixing direction in your mind and of looking all around you. A slow, careful trip out will assure a rapid and safe return.

Use of the Compass: A good compass, (one with a protected face is best) is a must for traveling in strange country. Check it out at the same time you are making your mental notes of direction and prominent land features. To orient the compass, hold it horizontally so that the needle swings freely. When the needle comes to rest, rotate the compass so that the needle on the dial and North coincide. Remember that this direction is Magnetic North and may vary from true North by an appreciable degree. Compare the needle direction with the North Star to learn the difference, or you can determine this "declination constant" from a map of the area. This deviation varies with location. Avoid orienting your compass near any iron or steel as these will cause swinging of the needle and incorrect readings. To use the compass, orient it, then determine the reading to a distant land mark in the direction you want to go. To return, orient the compass, subtract 180° from the outgoing reading, and move in the direction of the calculated "back sight". This will not necessarily return you to your exact original location, but if you have made your mental notes before leaving, have kept some idea of how far and how fast you have traveled out, you will be on familiar ground in due course upon returning.

Determining Direction Using a Watch: The watch must tell nearly correct sun time, not daylight savings time. Hold the watch horizontally, point the hour hand at the sun. **South** will be midway in the smallest angle between the hour hand and the symbol 12. On cloudy days a stick held upright on the center of the watch will cast a faint shadow. Align the shadow over the hour

6. **Muskrat, Beaver:** Beaver tail is especially delicious, broil it on a stick then remove the skin.

7. **Skunk:** Skin carefully, the meat is excellent. Active at night.

8. **Badger.**

9. **Raccoon, Ring-Tail Cat, Coati-Mundi.**

10. **Opossum.**

11. **Fox, Coyote, Bear.**

12. **Bobcat, Wildcat, Mountain Lion.**

13. **Mexican Free-Tail Bat.**

14. **Javelina (Collared Peccary):** Dark Gray-Black, about three feet long, weighing 30-50 pounds with sharp, strong tusks. Has scent glands on the back, almost over the hind legs. May be dangerous if cornered or wounded.

15. **White Tail Deer, Mule Deer, Elk:** Keep hair off the meat.

16. **Prong Horn Antelope:** 60 to 120 pounds. Keep hair off the meat.

17. **Desert Bighorn Sheep:** May weigh over 200 pounds.

18. **Mourning Dove:** Year-round resident, usually found near habitation and water. Sometimes nests in cholla cactus.

19. **White Wing Dove:** Resident, April to October, nests in mesquite and palo verde trees. Usually near water.

20. **Gambel's Quail, Scaled Quail, Mearns' Quail, Dusky Grouse, Pheasant:** The Gambel's is of primary importance in desert or semi-arid areas.

21. **Wild or Merriam's Turkey:** About 8 to 20 pounds. Found in pine and oak areas.

22. **Duck, Coot and other Water Fowl.**

23. **Owls, Hawks, Crows, Road Runners, Cactus Wrens,** and various other small birds.

24. **Woodpeckers:** Inhabits the Saguaro areas.

25. **Vulture and Eagle.**

26. **Bird Eggs:** All are edible.

27. **Fish.**

Survival Rations:

Here is a survival ration, originally developed by Mr. Lee Kelly, Survival Expert, which is tasty and which will provide enough food for 2 days in an emergency:

3 cups cereal—Oatmeal or Barley, Corn or Wheat Flakes	3 tablespoons Honey 3 tablespoons Water ½ package Citrus Flavored Gelatin
2½ cups powdered milk	
1 cup White Sugar	¼ teaspoon salt

Directions for Mixing:

Place all dry ingredients, except gelatin, in mixing bowl. Combine water and honey and bring to a boil. Dissolve the gelatin in the honey-water mixture, then add to the dry ingredients. Mix well. Add water a teaspoon at a time until the mixture is just moist enough to mold. Pack into a refrigerator dish or other mold. This recipe will make 2 bars, 1½ x 2 x 5 inches. The bars may be placed in the oven and dried under very low heat, then wrapped in foil and stored indefinitely. Each bar will provide about 1,000 calories and is sufficient food for one day. It can be eaten dry or cooked with about 2/3 of a canteen cup of water.

Edible Wildlife: Almost every animal and reptile, and many insects are edible, and many are sources of highly esteemed foods. Learn now to prepare the various things that would be available to you in a survival situation. Avoid any small mammal which appears to be sick as it may have tularemia, a disease transmittable to humans. A spotted liver in the animal is also an indication of this disease. Some animals have scent glands which must be removed before cooking. Do not allow the hair of these animals to come in contact with the flesh as it will give the meat a disagreeable taste.

1. **Jack Rabbit:** A hare, with long ears and legs, sandy color, may weigh up to 8 lbs. Grubs are often found in the hide or flesh, but these do not affect the food value.

2. **Cottontail Rabbit:** Small, pale gray with white tail. Active in the early morning and late evening.

3. **Pocket Gopher, Kangaroo Rat, Wood Rat, Pocket Mouse, Grasshopper Mouse:** Active at night.

4. **Ground Squirrel, Tree Squirrel, Chipmunk:** Out during the day.

5. **Porcupine:** Singe the quills, then skin and roast or boil.

hand, then North will be half way through the small angle between the shadow and the symbol 12.

Determining Direction From the Stars: Examine the sky each night for some time before going into the field. This acquaintance will give you a sense of confidence for night travel if it becomes necessary. The night sky, at a given hour each night, seems to have rotated a little, as well as rotating during the night. Take this into account. The only star which doesn't seem to move is Polaris, the North Star. Learn to recognize it, and the Pointers and other star arrangements, which will guide the eye to the North Star. When traveling at night use a star close to the horizon to guide on, but remember that the sky appears to rotate so that you must use a new star or adjust your direction every half hour or so.

Determining Direction From Nature: Trees may have moss which will be predominantly on the north and northeast sides of the trunks. Check a number of trees to get a good average direction reading. The tips of evergreens generally point toward the rising sun, approximately east. The plane on the top of the barrel cactus slants usually toward the southwest. A noon day shadow points north.

Navigational Hazards: The heat and high evaporation rate of the desert cause a phenomenon known as "mirage". The different density distribution of layers of hot air, usually close to the earth's surface causes light rays to reach the observer along several paths causing distorted, multiple or sometimes inverted images. These "heat waves" hamper your vision, making it difficult to determine distance or objects. It may cause objects or land marks to change shape, disappear or cause them to all appear alike. Another mirage is the false dawn of the desert, which seems to make the sun rise in the west.

Ground haze is a layer of warm air close to the ground which hampers and distorts vision.

SIGNALS: The best signals are fire—a large bright one at night, a smoky one by day, black smoke if the country is light colored, white smoke if the country is dark. Maintain a good supply of fuel to give the appropriate signal. Build your signal fire on the highest point near to your shade or shelter. If fuel is plentiful two fires are better than one.

The signal mirror is an excellent device for attracting attention, particularly of aircraft. They can be obtained at military or camping equipment stores, and the directions are included. It is a 2-faced metallic mirror with a hole in the center. You can

improvise one from a can lid which is shiny on both sides. To use, hold the mirror about three inches in front of your face, and sight through the hole on the object you are trying to signal. Move the mirror so that the light spot on your face, which you can see in reflection, disappears in the hole in the mirror while still maintaining sight of the plane, etc., through the hole. On a clear day ground signals may be transmitted for 10 miles, signals to aircraft an even greater distance.

Other signals may be constructed of stomped-down snow, piled brush, rocks, tree branches, etc. Make your signals run north and south to cast the maximum shadow. Aluminum foil is excellent signalling material if you have it.

Pilots understand these signals:

- I—Need Doctor
- II—Need Medicine
- X—Unable To Proceed
- F—Need Food-Water
- ≈ —Need Firearms
- K—Which Way
- ↑—Going This Way
- LL—All Is Well
- N—No
- Y—Yes
- └┐—Not Understood
- Need Map - Compass

Signals made by sound are the least effective. Three whistles or hoots or whatever sound you can make denotes the distress signal. If you have a firearm, shoot once, wait 10 seconds and fire twice more about 5 seconds apart. The first will attract attention and the second and third will give direction. If there is no answer save your ammunition. The best time for sound signals is during the early evening quiet just before dark.

CLOTHING AND EQUIPMENT

Clothing: Clothing requirements will vary considerably with the season and the environment. For the hot desert, light weight and light colored clothing which covers the whole body is best.

overhead may mean rabbits or other rodents below; birds flocking may not only mean edible berries but will probably mean water nearby. Game will be found around water holes and in areas that are prominent because of heavier brush growth.

Food List: When planning your trip include items which have a high energy value and little weight. The new dehydrated foods are excellent, and keep well. Generally, meats have a higher energy value than vegetables. Candies are O.K. if you have a good water supply, but they will increase thirst. Here is a list of foods in quantity about equal to that required for one person for two weeks or two persons for one week, etc. Use this list also for disaster planning:

1. Canned meats, fish, poultry—8 lbs.
2. Prepared canned food with meat, fish, poultry (chili, spaghetti, macaroni, beans, etc.)—12 lbs.
3. Canned soups (condensed, containing meats, fish, poultry) 7 lbs. (or equivalent in dehydrated soup products).
4. Canned fruits and vegetables—12 lbs.
5. Canned juices (regular strength)—14 - 1# tall cans.
6. Dried fruit—4 lbs.
7. Crackers and cookies—5 lbs.
8. Evaporated milk—7 - 14½ oz. cans.
9. Powdered milk—1½ lbs.
10. Cereal, dry, ready to eat—4 lbs.
11. Cereal, quick cooking—4 lbs.
12. Flour—3 lbs.
13. Flour mixes—3 lbs.
14. Fats and oils—1 lb.
15. Jam, jellies and peanut butter—2 lbs.
16. Sugar and Candies—2 lbs.
17. Relish, catsup, mustard, honey, syrup—as required.
18. Coffee, tea, instant cocoa, instant cream, salt, pepper, vinegar, baking soda, boullion cubes, etc.—as required.
19. Don't forget the can opener!

Look for the "indicator" plants which grow only where there is water: cottonwoods, sycamores, willows, hackberry, saltcedar (tamarisk), cattails and arrow weed. You may have to dig to find this water. Also keep on the lookout for windmills and water tanks built by ranchers. If cactus fruit is ripe eat a lot of them (see section on foods), to help prevent dehydration.

The immature flower stalks of Agave, Yucca and Sotol contain moisture, or if no flower stalks are present the main stalks may be split open and the pith chewed to prevent dehydration. The barrel cactus contains a high degree of moisture, but to press out water is pure myth, as the mucilaginous, acrid juice thickens rapidly. To remove moisture chew on the pith but do not swallow it. Carry chunks of the pith with you to suck on to alleviate thirst. Young plants six to eighteen inches in height, and with a soft green color will have the higher moisture content. The root of the night blooming cereus is also high in moisture.

Methods of Purifying Water: Dirty water should be strained, but straining does not purify even though it may look clean. Incidentally, these purifying methods will not remove radioactive fallout from water.

1. Water purification tablets are the easiest to use. Get them from the drug store and follow the directions on the label. Not only do you need them in your survival kit and in your car or plane, but you should keep an emergency supply at home. Generally, one tablet is sufficient for one quart of water or two tablets if water is cloudy. Let stand for thirty minutes.

2. Tincture of Iodine; add two drops per quart of clear water, double for cloudy water. Let stand for thirty minutes.

3. Household bleach (sodium hypochlorite): 2 drops per quart of clear water, 4 drops per quart of cloudy water. Stir, let stand 30 minutes.

4. Boiling for 5 minutes will purify most water. Add charcoal while boiling to remove disagreeable odors from water. Agitate to aerate and restore taste.

FOOD

You must have water to survive, but you can go without food for some time without harmful effects. In fact, if water is not available, do not eat, as food will only increase your need for water. The important thing about locating food in a survival situation is to know what foods are available in the particular environment and how to go about obtaining them. Hawks soaring

Long trousers and long sleeves protect from the sun, help to prevent dehydration and protect against insects, abrasions and lacerations by rocks and brush and tend to reduce infections caused by these injuries. Head gear should provide all around shade as well as eye shade. Shoes should be light weight but sturdy, and should protect the ankles. Remember thorns and spines make walking a problem. Woolen socks are recommended, and spare socks should always be carried. Gloves are helpful to protect hands from spines and thorns when handling brush and firewood. Winter clothing requirements for the southwest vary with the altitudes in which you are operating. Also in winter, keeping dry is important. The "layer" system is best. Several light garments are easily carried and are more versatile in varying temperatures than are heavier garments, and will prove at least as warm. They should be selected for size, keeping in mind that other clothing may be placed over or under them. A light weight, water repellant, wind breaker should be available to wear alone or over the layers. A coat style is best as it will protect the hips. Headgear should shade the eyes and some provision should be made to protect the ears. Earflaps in the headgear are probably best and are always available. Footgear should be sturdy, protect the ankles, and be water repellant. Do not grease shoes—it makes them cold, tends to rot the leather, and does not waterproof them. Silicone preparations are excellent, easy to apply, and lasting. Woolen socks are again recommended, and spare socks should always be carried. In winter it is most important that the feet be kept dry to help prevent "trench foot" and frost bite. Damp socks can be carried inside the shirt front against the body to dry them out.

Equipment: Your method of travel will dictate in large part the equipment to carry. When traveling by auto you will carry "pioneer" gear such as shovels, picks, heavy rope, etc. You must also think about bedding, cooking gear, can opener, eating utensils, flashlight with spare batteries, lantern with fuel, First Aid kit, towels, soap, toilet paper, tissues, paper napkins, old newspapers. These same items are also to be considered when setting up the home shelter against disaster. In this section, however, we are primarily interested in those items to be carried by the individual on foot, whether engaged in recreational activity or "walking out" from a downed aircraft, a disabled vehicle or other survival problem.

Survival Kit: The following is a kit outlined in many writings on survival. The detailed use of the items will not be gone into here but learn how to use each item and practice with it before you must use it to survive:

1. Knife—a good small one of the “boy scout” variety is excellent.
2. Matches—12 or more, strike anywhere, waterproofed by coating with parafin, beeswax, fingernail polish, etc.
3. Candle stub—used for light or as an assist in starting fires—helps to conserve matches.
4. A small magnifying lens—used to start fires, and as aid in removing small spines or splinters.
5. Flint and steel fire starter. Make by attaching a lighter flint to the end of a small sturdy stick. Wrap a length of cobblers linen around the stick. To make a fire, fuzz the end of the linen, position the fuzz at the flint and strike against steel, the fuzz will catch the spark and can be blown into a flame. Practice with it. A small cigarette lighter will do the trick, but do not depend on having fluid in it at the time you need it. Ordinary lighter wick will not flame when dry.
6. Water purification tablets, 10 or more. Iodine tablets are probably best.
7. A small magnetic compass. Learn to use it.
8. A small metal signalling mirror.
9. Aluminum foil, about five feet of the 12 inch heavy duty type, used for signaling, a reflector for fire or candle, to make a cooking pot or a drinking cup.
10. Toy balloons. Three or four of the large heavy bright orange-colored ones, used for emergency water containers or for signaling.
11. A single edged razor blade. A handy first aid tool. Leave in the original package to prevent rusting.
12. A large-eyed needle. For first aid and sewing purposes. Keep from rusting.
13. Adhesive tape. About 2 feet, 1 inch wide, primarily for first aid purposes.
14. Pencil stub. Assist rescue parties by leaving notes.
15. Cigarette papers. A book of these for writing notes, or to leave as trail markers.
16. Cobblers linen thread. A hundred feet or more, 8 strand. Used to set snares, build shelter, repair or improvise clothing, etc.

as food and not as water since additional water is required to assimilate the alcohol. For the same reason, food intake should be kept to a minimum if sufficient water is not available.

Carrying Water: When planning to travel give your water supply extra thought. Carry enough water based on the charted requirements. Do not carry your water in glass containers. These may break. Metal insulated containers are good, but heavy. Carry some water in gallon or ½ gallon plastic containers similar to those containing bleach. They are unbreakable, light-weight and carrying several will assure a water supply if one is damaged.

Finding Water in the Desert: If you are near water it is best to remain there and prepare signals for your rescuers. If no water is immediately available look for it, following these leads:

Watch for desert trails—following them may lead to water or civilization, particularly if several such trails join and “arrow” downward toward a specific location.

Flocks of birds will circle over water holes. Listen for their chirping in the morning and evening, and you may be able to locate their watering spot. Quail fly toward water in the late afternoon and away in the morning. Doves flock toward watering spots morning and evening. Also look for the diggings and browsings of wild animals as they tend to feed near water.

Water may be found at the base of rock cliffs for some time after a rain. It may be found in the waste rock at the base of cliffs or in the gravel-wash from mountain valleys which get regular seasonal rains. Limestone and lava have more and larger springs than any other type rocks. Springs of cold water are safest. Limestone caverns often have springs, but remain in sight of the entrance as you may get lost. Look for springs along walls of valleys that cross the lava flow. Springs may be found along valley floors or down along their sloping sides. See if there is seepage where the dry canyon cuts through a layer of porous sandstone. Dry stream beds may have water just below the surface. Look at the lowest point on the outside of a bend in the stream channel. Dig until you hit wet sand. Water will seep out of the sand into the hole. Damp surface sand marks a place to dig a shallow well. Dig at the lowest point and go down 3 to 6 feet. If the sand stays damp, keep digging. Look at hillsides to see where the grass is lush and green. Dig at the base of the green zone and wait for water to seep into the hole. Water is more abundant and easier to find in loose sediment than in rocks. Look for a wet spot on the surface of a clay bluff or at the foot of the bluff and try digging it out.

Symptoms of Dehydration: Only by the ability to recognize the initial symptoms of dehydration can one logically expect to take corrective measures to prevent further (and possibly fatal) dehydration. Learn these symptoms:

Thirst discomfort, slow motion, no appetite, and later nausea, drowsiness, and high temperature. If dehydration is from 6 to 10 percent, symptoms will be: dizziness, headache, dry mouth, difficulty in breathing, tingling in arms and legs, bluish color, indistinct speech and finally inability to walk.

Prevention of Dehydration: Thirst is not an indication of the amount of water you need. If you drink only enough to satisfy your thirst, you can still dehydrate. Drink plenty of water, especially at meal times.

Gum or pebbles in the mouth do no harm but they are not a substitute for water and will not aid in keeping your body temperature normal. Smoking increases your need for water. Smoking encourages oral breathing, thus exposing large areas of mucous membranes to drying influences. Avoid or curtail smoking in survival situations. Salt will do you definite harm unless plenty of water is available. Don't worry about salt but do try to keep up the water intake.

Ration Sweat, Not Water: In hot deserts you need about a gallon of water a day. If you walk at night, you may get about 20 miles for that gallon, but if you walk in the daytime heat, you will get less than 10 miles to the gallon.

Keep your clothing on, including shirt and hat. Clothing helps ration your sweat by slowing the evaporation rate and prolonging the cooling effect. It also keeps out the hot desert air and reflects the heat of the sun. Stay in the shade during the day. Sit on something 12 or more inches off the ground, if possible. **DO NOT LIE ON THE GROUND** as it can be 30 degrees hotter than a foot above the ground. If travel is indicated or necessary, travel slowly and steadily.

Rationing water at high temperatures is actually inviting disaster because small amounts will not prevent dehydration. Loss of efficiency and collapse always follow dehydration. **IT IS THE WATER IN YOUR BODY THAT SAVES YOUR LIFE, NOT THE WATER IN YOUR CANTEEN.**

KEEP THE MOUTH SHUT and BREATHE THROUGH THE NOSE to reduce water loss and drying of mucous membranes. **AVOID CONVERSATION** for the same reason. If possible, cover lips with grease or oil. **ALCOHOL IN ANY FORM IS TO BE AVOIDED** as it will accelerate dehydration. Consider alcohol

17. Fish hooks. Five, assorted sizes. Use a little bait to snare birds, etc.

18. Box nails. About five, blunted and bent to hook shape, to be used as snare triggers.

19. Nylon chiffon. A piece about a yard square, bright orange color, to be used for signaling, for straining dirty water, or as a face covering during sand or dust storms.

All of the above items can be fitted into a tobacco tin, a band-aid box or a similarly sized plastic box and be ready to go at any time. Check it from time to time to be sure all items are there and in good shape.

Other items that should be carried on the individual are: a sharp belt knife, a good map of the area, if available, thirty or more feet of nylon parachute shroud line, canteen, a watch, a snake bit kit, a firearm and ammunition, and such other items which may be small and useful. Consider carrying your gear in a small rucksack or pack over your shoulders. Weight carried in this manner is less tiring than if carried in pockets or hung on the belt. The pack can be used to sit upon. It also affords a safer method of carrying those things, such as the belt knife, hatchet, etc., which may lend to the chances of injury in case of a fall.

HEALTH HAZARDS

Much thought must be given to protecting your health and well being, and the prevention of fatigue and injury: first, because medical assistance will be some time and distance away; second, because conditions are usually different and distinct from your everyday living. The desert is a usually healthy environment due to dryness, the lack of human and animal wastes, and the sterilizing effect of the hot sun. The higher elevations will also present an environment conducive to good health, since the major part of human disease is transmitted through respiratory action or through contact. Therefore, your immediate bodily needs will be your first consideration.

If you are walking or active, rest 10 minutes each hour. Drink plenty of water, especially early in the morning while the temperature is still low.

While on the desert or in snow, wear sun glasses to protect your eyes from glare. If you have no glasses make an eyeshade by slitting a piece of paper, cardboard or cloth. Blacken around the eyes with soot or charcoal. Even though the glare does not seem to bother you it will impair your distant vision and will retard your adaptation to night conditions.

Use chapstick or grease on lips or nostrils. Do not "lick" your lips if they are dry as this will hasten splitting.

Change your socks regularly even though you must change to used socks. Sunning and aeration of socks and under clothing have a marked freshening value.

Do not remove your clothing in an attempt to keep cool. This will only hasten dehydration, as will sitting on the hot ground.

In winter, do not sit down if your clothing is damp or you have been perspiring unless you have additional clothing or a fire. If you have neither, walk slowly around a tree or in a circle where ground is level and footing good.

Do not travel in storms. Mark the direction you were traveling and find shelter. In dust storms lie down with your back to the wind. Cover your head with a cloth to keep dust out of your eyes, ears, nose and mouth.

In a survival situation everything that you do, each motion that you make, and each step you take must be preceded by the thought: Am I safe in doing this?

WATER

WATER REQUIREMENT CHARTS

(from "The Physiology of Man in the Desert"
by Adolph & Associates)

A. Number of Days of Expected Survival in the Desert, No Walking At All:

Available water per man, U. S. Quarts	0	1	2	4	10	20
Max. daily shade temp. F.	Days of expected survival					
120 degrees	2	2	2	2.5	3	4.5
110	3	3	3.5	4	5	7
100	5	5.5	6	7	9.5	13.5
90	7	8	9	10.5	15	23
80	9	10	11	13	19	29
70	10	11	12	14	20.5	32
60	10	11	12	14	21	32
50	10	11	12	14.5	21	32

B. Number of Days of Expected Survival in the Desert, Walking at Night Until Exhausted and Resting Thereafter:

Available water per man, U. S. Quarts	0	1	2	4	10	20
Max. daily shade temp. F.	Days of expected survival					
120 degrees	1	2	2	2.5	3	
110	2	2	2.5	3	3.5	
100	3	3.5	3.5	4.5	5.5	
90	5	5.5	5.5	6.5	8	
80	7	7.5	8	9.5	11.5	
70	7.5	8	9	10.5	13.5	
60	8	8.5	9	11	14	
50	8	8.5	9	11	14	

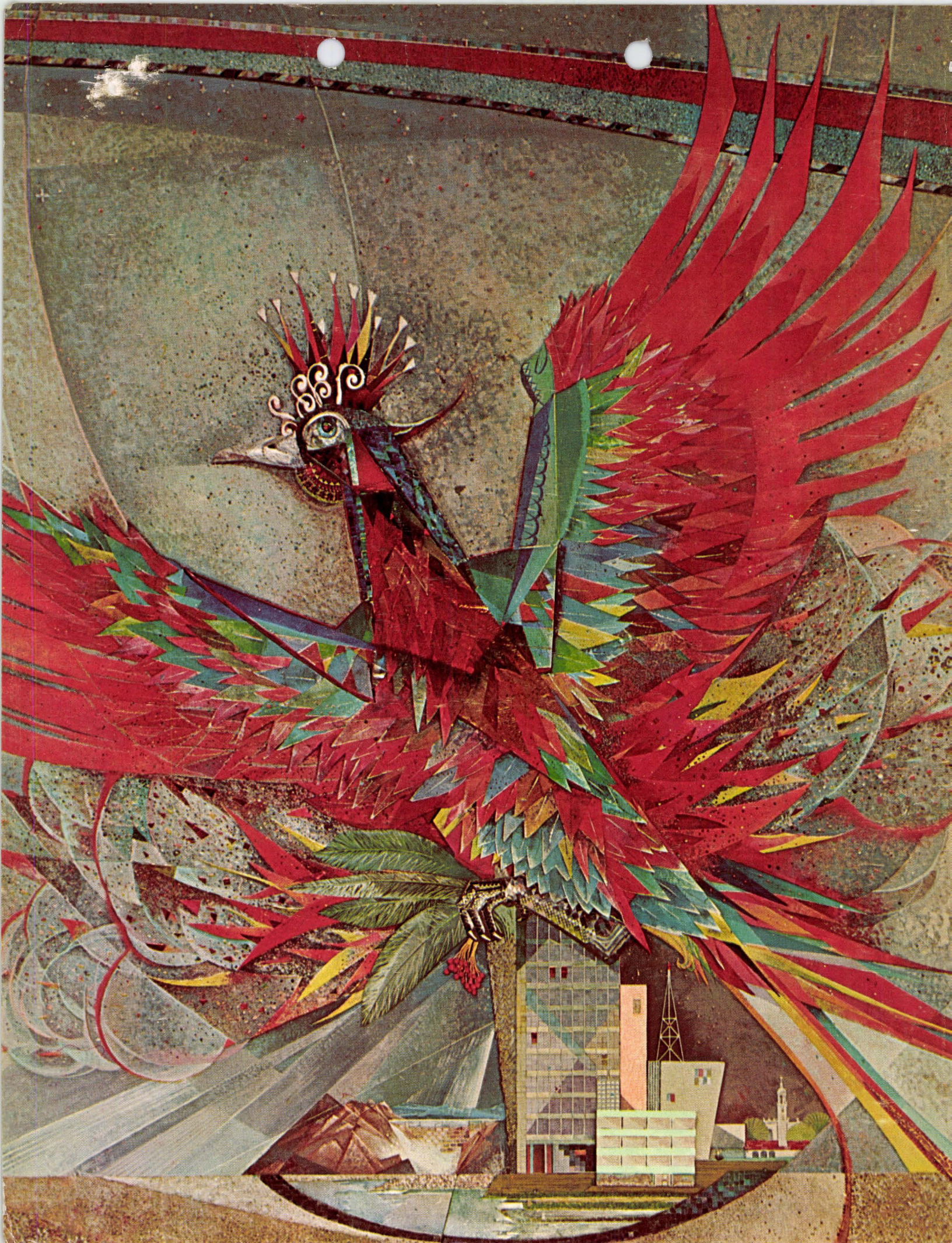
The importance of temperature reduction to the survivor is highlighted by the following in Chart A: Temperature 120°, water available 2 quarts, days of expected survival 2; reduce the temperature to 100°, and 2 quarts of water will extend your life expectancy THREE TIMES. This importance to a potential "survivor" cannot be overemphasized. Night travel, or better, NO TRAVEL, is stressed.

At equal temperatures, the body requires two to three times as much water to maintain water balance in the desert as it requires in the jungle.

Dehydration: An increase in body temperature of 6 to 8 degrees above normal (98.6) for any extended period causes death. Body temperature in a healthy person can be raised to the danger point either by absorbing heat or by generating it. The body absorbs heat from the air if the air is above 92 degrees Fahrenheit. Direct sunlight striking the body, will increase temperature even if the air is cool. You can also absorb heat reflected from the ground or absorb it directly from the ground by contact. Any kind of work or exercise increases body heat.

The body gets rid of excess heat and attempts to keep the temperature normal by sweating, but when you sweat the body loses water and you become dehydrated. It has been proven that you can do twice as much work or walk twice as far with sufficient water and normal temperatures as you can after you lose 1½ quarts of water by sweating under 100 degree temperature.

No permanent harm is done to a man who dehydrates up to 10% of his weight, IF, later he drinks enough water to gain it back. However, 25% dehydration at temperatures in the nineties or above, will probably be fatal. You can drink cool or warm water as fast as you want, but ice cold water may cause distress and cramps.



PHOENIX SKY HARBOR MUNICIPAL AIRPORT TERMINAL

East Wing Dedicated May 26, 1962 in Phoenix, Arizona

CITY OF PHOENIX, ARIZONA

Phoenix is the largest city in Arizona and one of the most important civic, business and industrial centers in the Southwest. It serves a vast metropolitan area exceeding 800,000 people.

The City was founded in 1869 and incorporated in 1881. By May 1, 1963, the City had reached an estimated population of 505,260, covering a land area of 222.6 square miles.

Phoenix is governed under a City Charter adopted in 1913. It was one of the first cities in the nation to adopt the Council-Manager form of government. The Charter has since been revised, but this only served to strengthen the original concept of the Council-Manager plan. Legislation and policy-making is the responsibility of the Mayor and six Council members, all elected at large on a non-partisan ballot for two year terms. The Charter provides for a City Manager who is responsible for the administration of City affairs.

Sky Harbor is under the Division of Airports in the Public Works Department. The administration office is in the East Wing of the Terminal Building.

SKY HARBOR MUNICIPAL AIRPORT

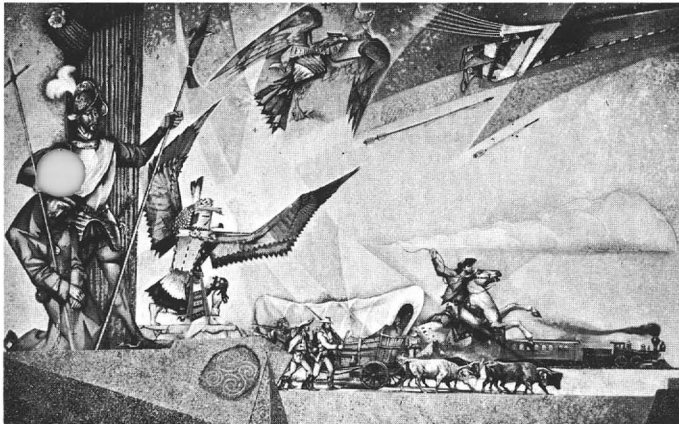
The City of Phoenix and the development of air transportation have progressed rapidly since 1911. In that year, Cal Rogers used a Phoenix alfalfa field to land his Curtis Wright airplane on a stop over for the first transcontinental flight from New York to Pasadena, a flight of 49 days' duration.

The first City-owned airport was located on a 400-acre tract of land eight miles west of downtown Phoenix. Sky Harbor Airport began at the present site located four miles east of downtown Phoenix, with the initial purchase of 235 acres of land made in early 1935, at a total cost of \$70,000. Today, Sky Harbor has increased in size to over 1400 acres, (2.18 square miles) with an investment of over \$27 million in land, buildings, runways and other improvements. More land is constantly being acquired for clear zone and future runway extension purposes. Sky Harbor serves the air traffic needs of a rapidly growing Phoenix metropolitan area, anticipated to be nearly two million people by 1980.

TERMINAL BUILDING — EAST WING

This new \$2.7 million building, part of a \$4.5 million complex, was opened on April 16, 1962. This building was constructed with funds derived from Airport Revenue Bonds, Federal Aid, Airport earnings and is the first of five stages of terminal building development. Since 1956, \$10 million have been spent for land acquisition and terminal building facilities to meet present and future air service needs. This modern facility is designed to efficiently and conveniently handle more than 1,800,000 passengers a year.

One of the most important planning features of this building is that any part — ticketing wing, main lobby, or passenger concourse — can be expanded independently to meet future demands for space. Another unusual feature of the terminal building is the small, open-air patio. Here, amid semi-tropical vegetation, reflecting pool and fountain, stands a Spanish-type chapel with an old mission bell.



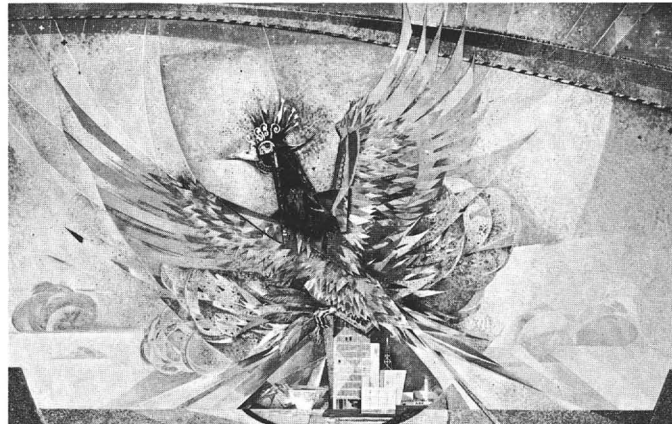
Left Panel — The EARTH

First Americans are represented by spiral *Hobokam* petroglyph and *Eagle Kachina* (one of the semigods of the Pueblos).

First missile of man: *atlatl* dart and arrow shooting toward the *Rainbow God*, a mosaic relating the three panels.

By a *Saguaro in bloom* (Arizona State Flower), first white men in Arizona: *Conquistador* and *Franciscan priest* (16th Century). Territorial, Pioneer, and Horse Ages (lower right) with *covered wagon*, *Mormon battalion*, *buckskin rider* and first *train* (Southern Pacific).

Above *American Eagle* with *Admission Day* date, in sky, stars take shape of famous Arizona cattle brands.



Center Panel — WATER and FIRE

The mythological *Phoenix* bird of antiquity gave name to the city, circa 1869, after scholar Phillip Darrell Duppa's suggestion. Bird is aflame; feathers shoot out like missiles. It is sitting on top of *date tree* (*Phoenix dactylifera*) burning himself to be reborn from the ashes. Artist's conception shows smoke turning into rain clouds, and water collected by *Roosevelt Dam* makes city life possible by *irrigation*. Local and symbolic materials were used in building bird.



Right Panel — The AIR **THE ARTIST — Paul Coze**

Outstretched hands toward space (Hopi design *sun*, Navaho design *moon*, Apache, Pima, and Papago stars)

A swirl of *atoms* in jet-like design.

Towers, power lines, gas turbine, and solar energy reflector indicate scientific research and commercial crafts in Phoenix.

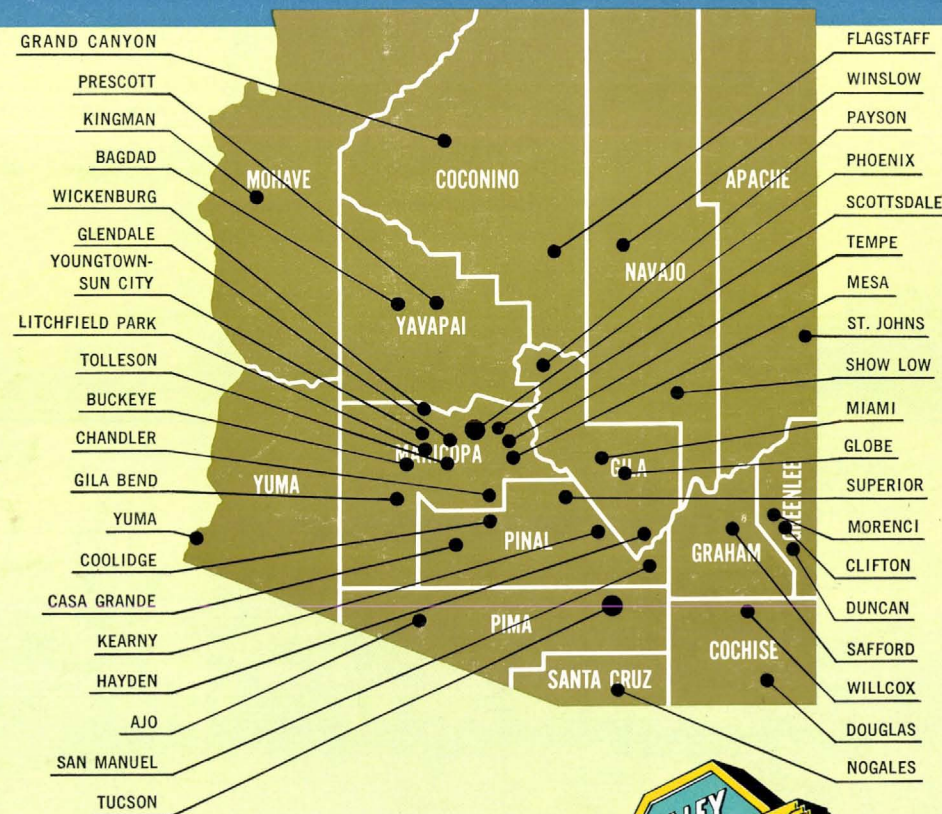
Stars above, take shape of *electronic symbols*.

Black Angus, *Hereford*, and *Brahma* cattle, cotton fields, and citrus groves indicate valley traditions as a miner's shovel and pick reaches for *copper ore*.

Sand and pebble from all parts of Arizona tie together all three murals.

offices
in all
14
counties

ARIZONA'S WORKING PARTNER...YOUR HELPFUL BANK!

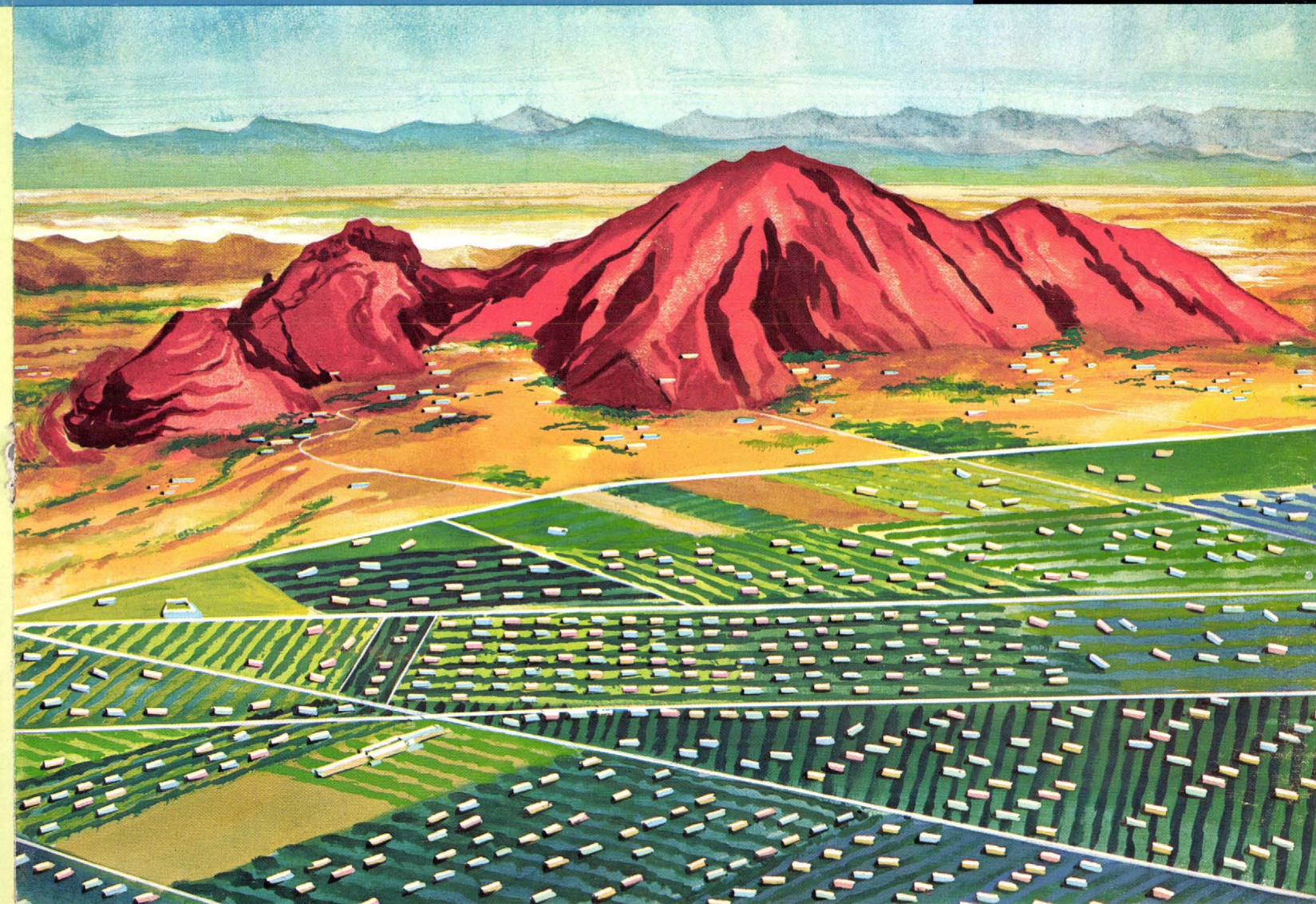
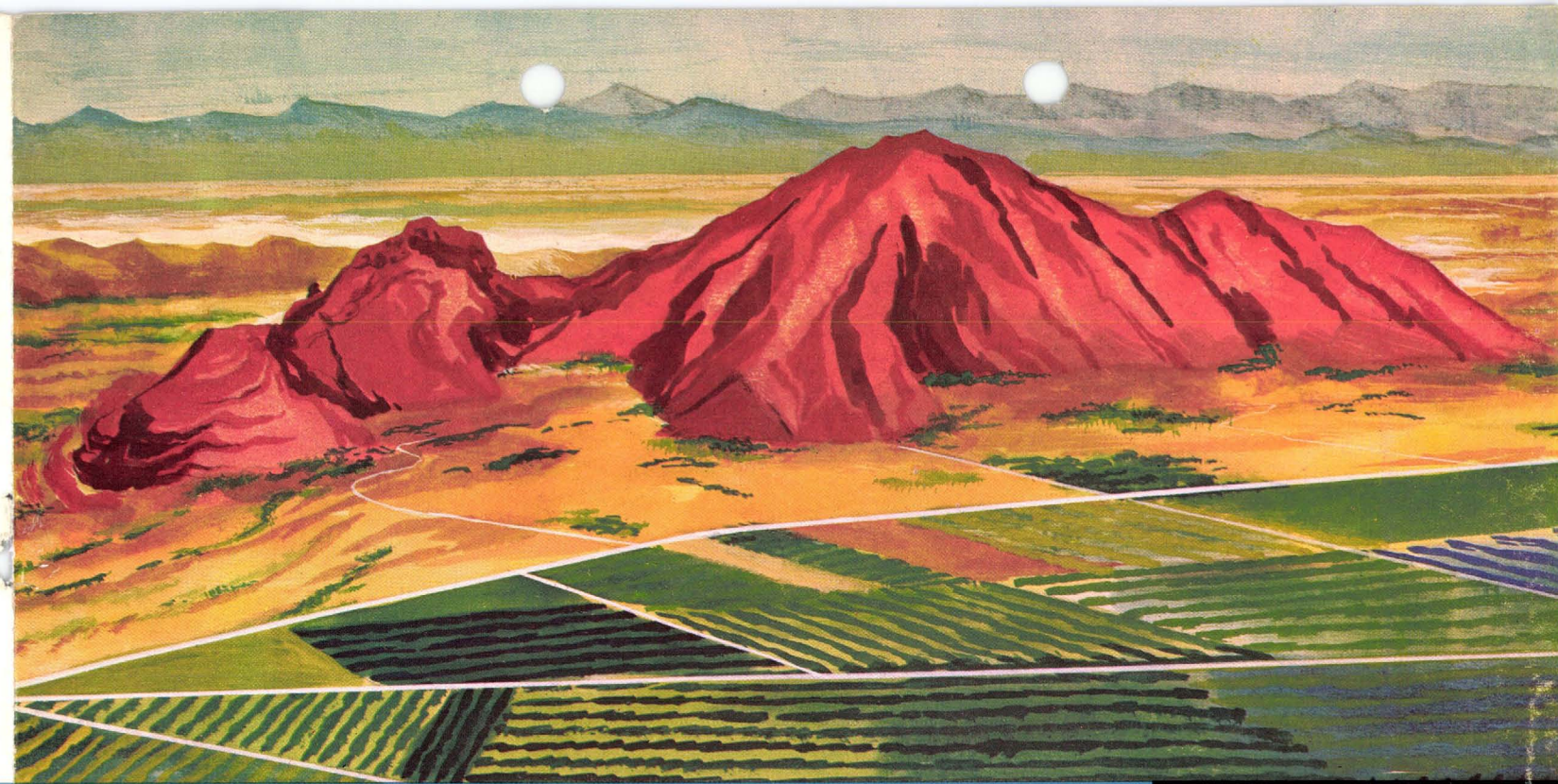


MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION

RESOURCES OVER \$800 MILLION

ARIZONA! "SEEING IS BELIEVING"

MAYBE NOW YOU'LL BELIEVE
WHAT YOU'VE BEEN HEARING
ABOUT THIS STATE!



“A PICTURE
IS WORTH
TEN THOUSAND
WORDS”

We were tempted to omit any comment on these “then and now” aerial photographs of some specific areas, but Arizonans—bursting with pride—feel compelled to gild the lily of the state of their State.

So we’ve listed a few vital statistics.

After perusing this little eye-opener, some of you will find your interest in Arizona heightened to the extent that you feel you must have further information.

Well, anything to do with the economy of this state falls within the province of the Valley Bank.* So we shall be glad to answer your questions as best we can. Write:

VALLEY NATIONAL BANK
BUSINESS DEVELOPMENT,
DEPT. “A” P.O. BOX 71,
PHOENIX 1, ARIZONA

***QUALIFICATIONS:**
We started our partnership with The Territory of Arizona, in 1899. Today, we have some 80 offices and 2200 employees, scattered throughout all 14 Counties, and are on a first-hand (and first-name) basis with every segment of the economy.

At the year-end (1962), we had resources of \$825 million, deposits of \$744 million, loans outstanding \$535 million... and were serving more than 450,000 Arizona customers.

TIPIFYING ARIZONA'S PROGRESS

	1952	1962*
Population	875,000	1,545,000
Personal Income	\$1,395,000,000	\$3,100,000,000
Retail Sales	1,000,104,000	2,120,000,000
Manufacturing Output	255,000,000	850,000,000
Mining Output	231,700,000	481,000,000
Tourist Expenditures	135,000,000	350,000,000
Construction	215,000,000	700,000,000

*VNB RESEARCH ESTIMATES



▲ SEPTEMBER, 1959

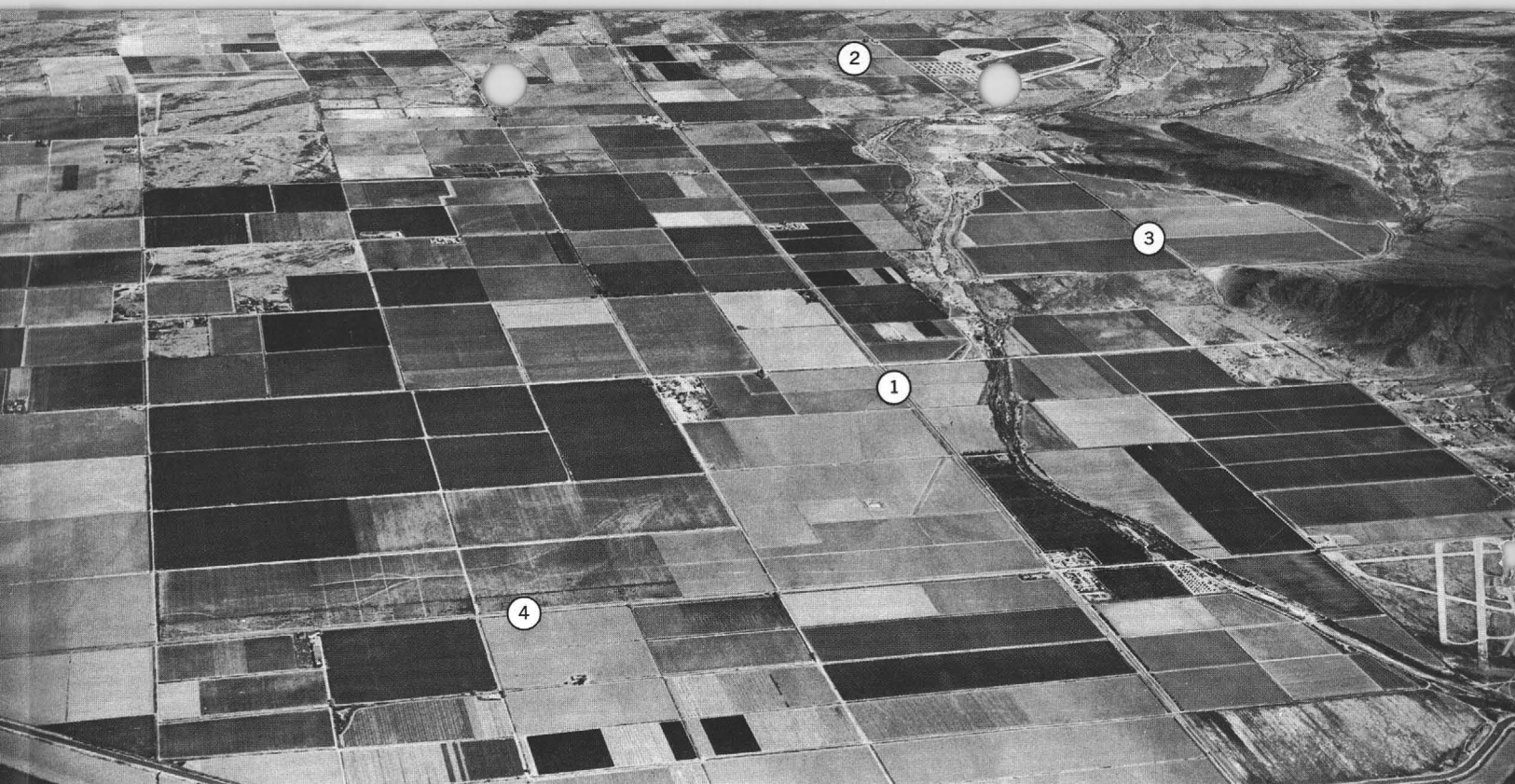
And here is Sun City, our famous retirement community that bloomed on the desert beside the original Youngtown.

▼ JANUARY, 1963

Photos, courtesy Del E. Webb Corporation

- 1 U.S. HIGHWAY 60-70-89
- 2 107th AVENUE
- 3 111th AVENUE





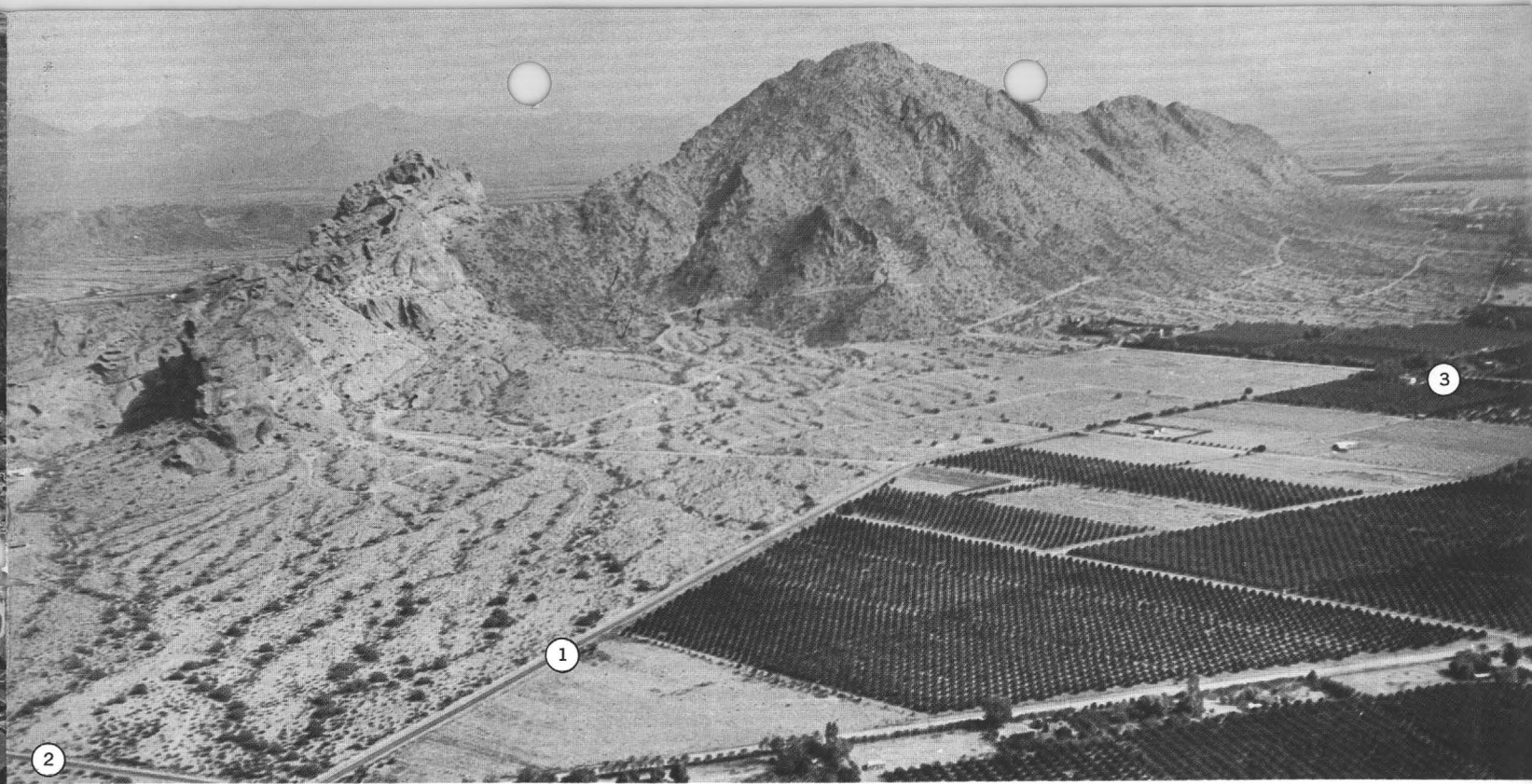
▲ MARCH, 1957

The irrigated ranchland of *Deer Valley*, northeast of Phoenix, has been replaced with homes by the thousands and fine industrial plants of national firms.

▼ DECEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 BLACK CANYON HIGHWAY
- 2 BELL ROAD
- 3 19th AVENUE
- 4 PEORIA AVENUE



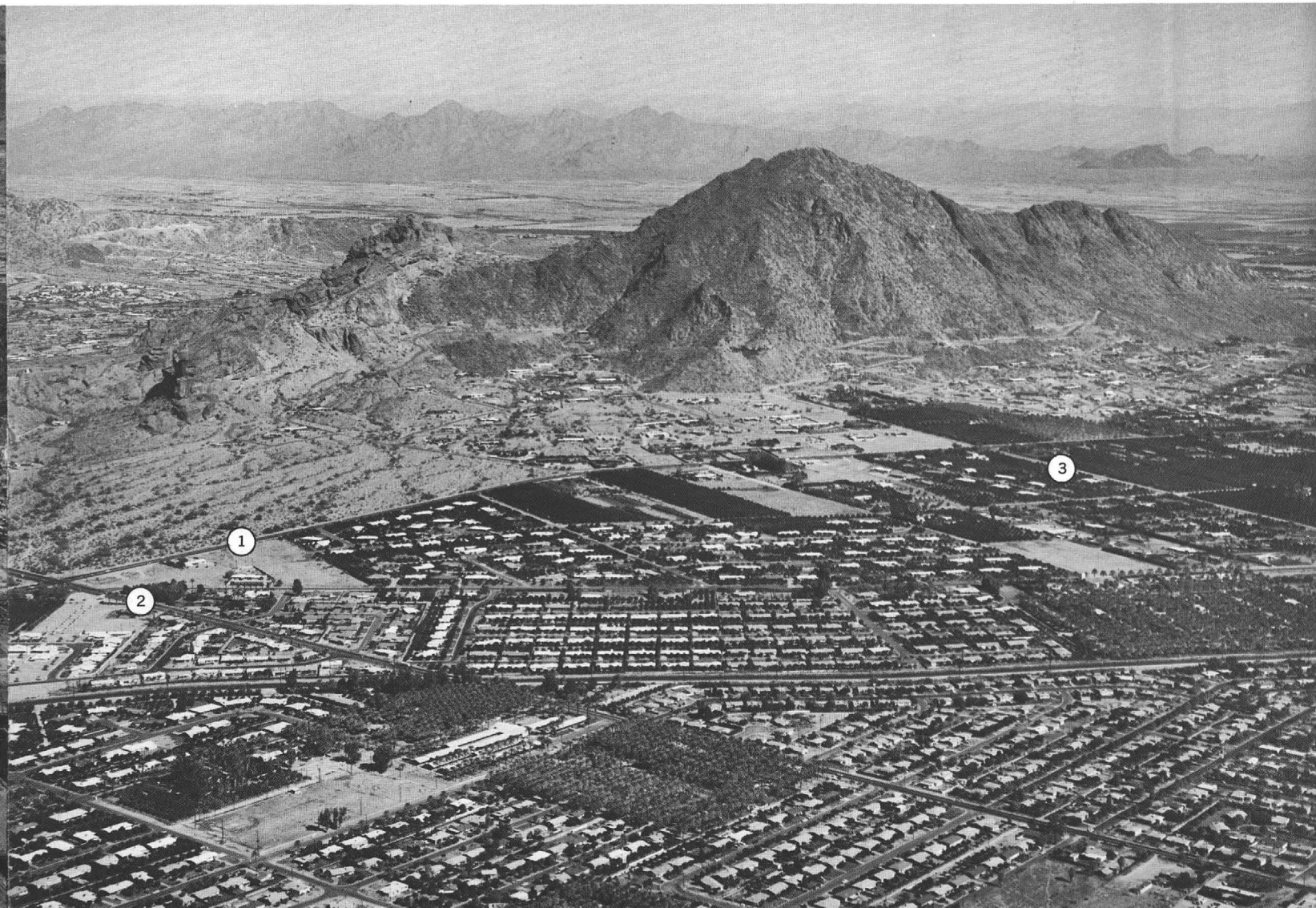
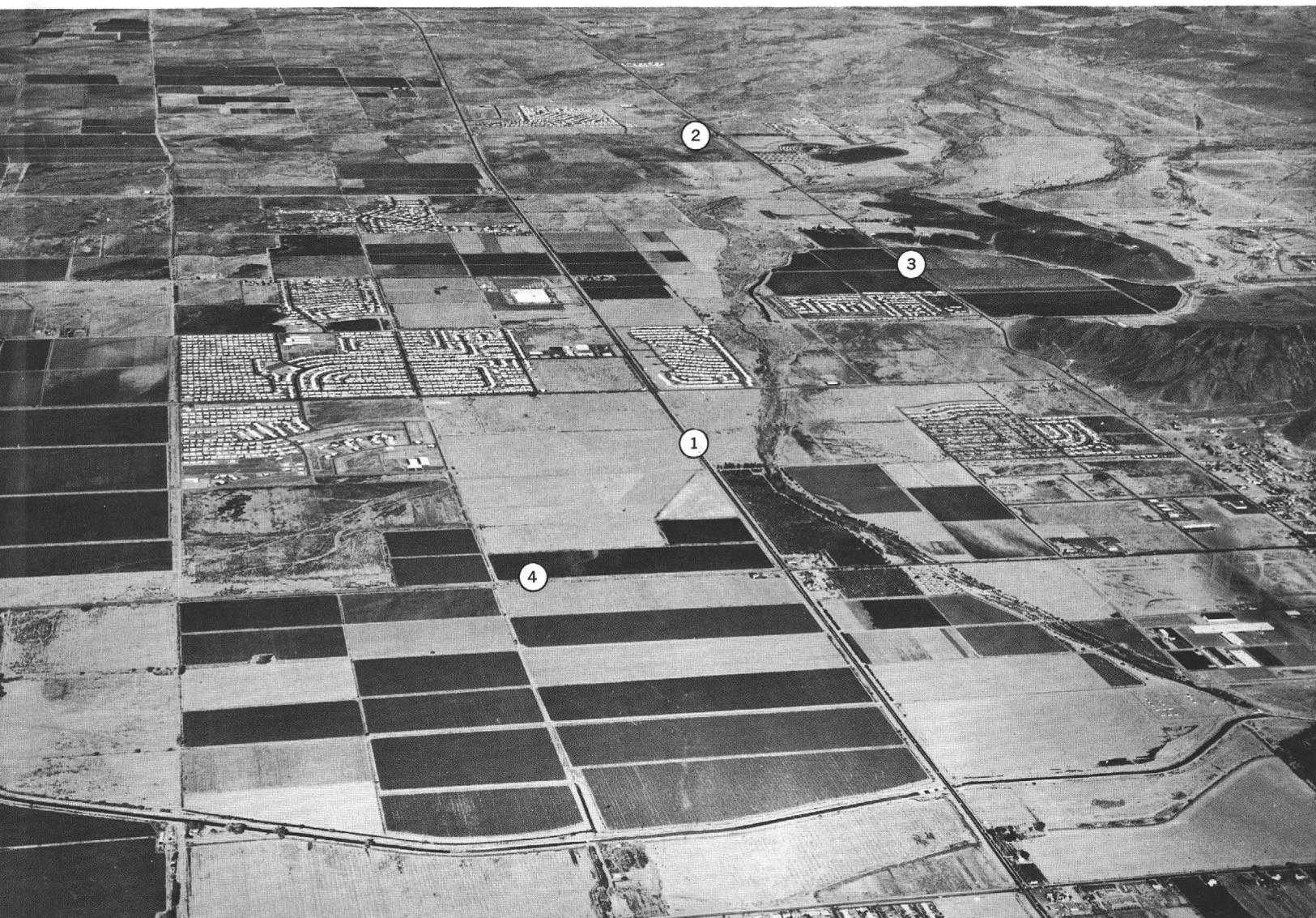
▲ NOVEMBER, 1947

The world-famous *Camelback Mountain area* . . . now one of the most delightful residential districts in Phoenix.

▼ NOVEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 CAMELBACK ROAD
- 2 44th STREET
- 3 ARCADIA DRIVE





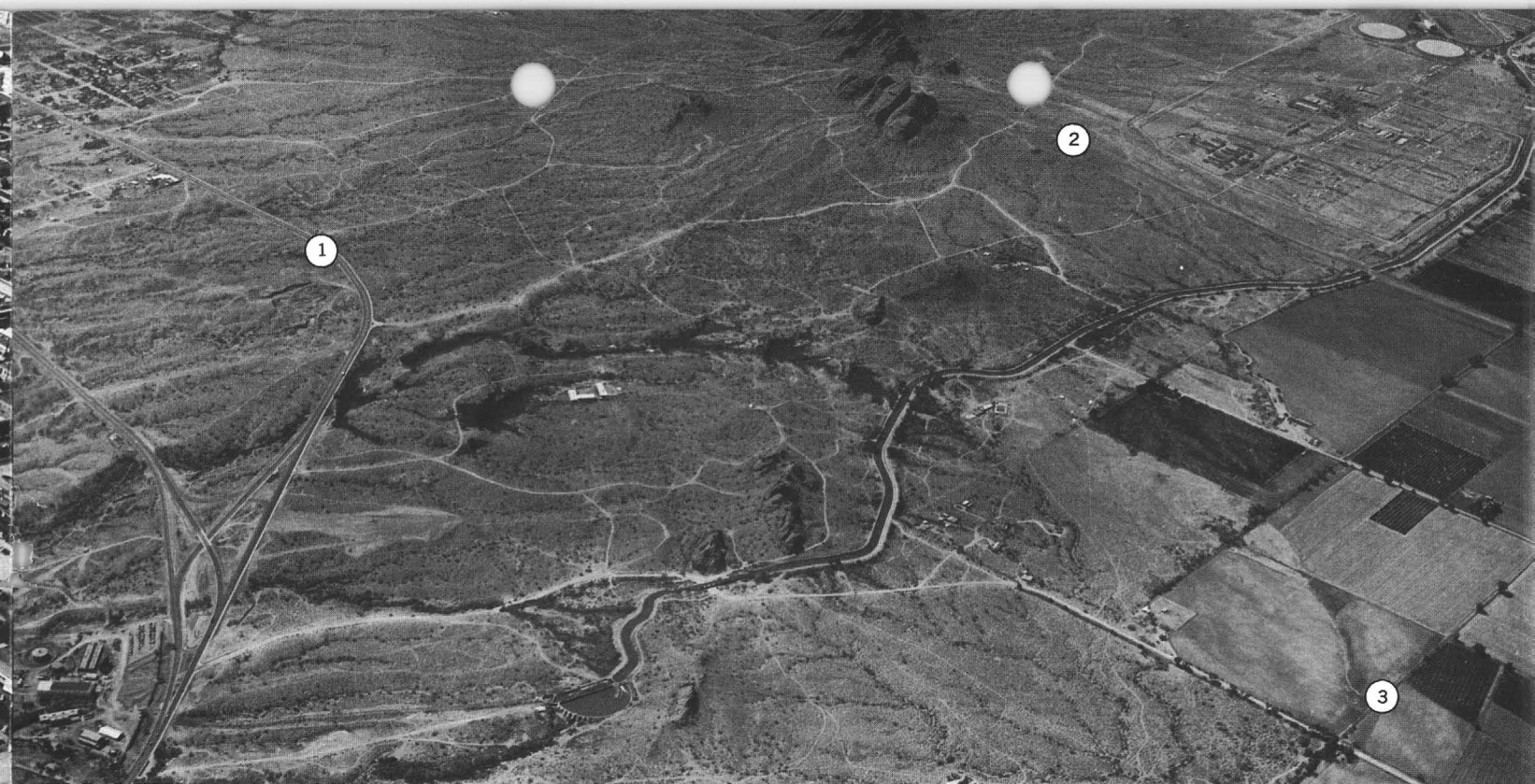
▲ MAY, 1948

The change in *downtown Phoenix* has been steady . . . with almost every important block reflecting growth.

▼ NOVEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 CENTRAL AVENUE
- 2 VAN BUREN STREET
- 3 WASHINGTON STREET



▲ JUNE, 1954

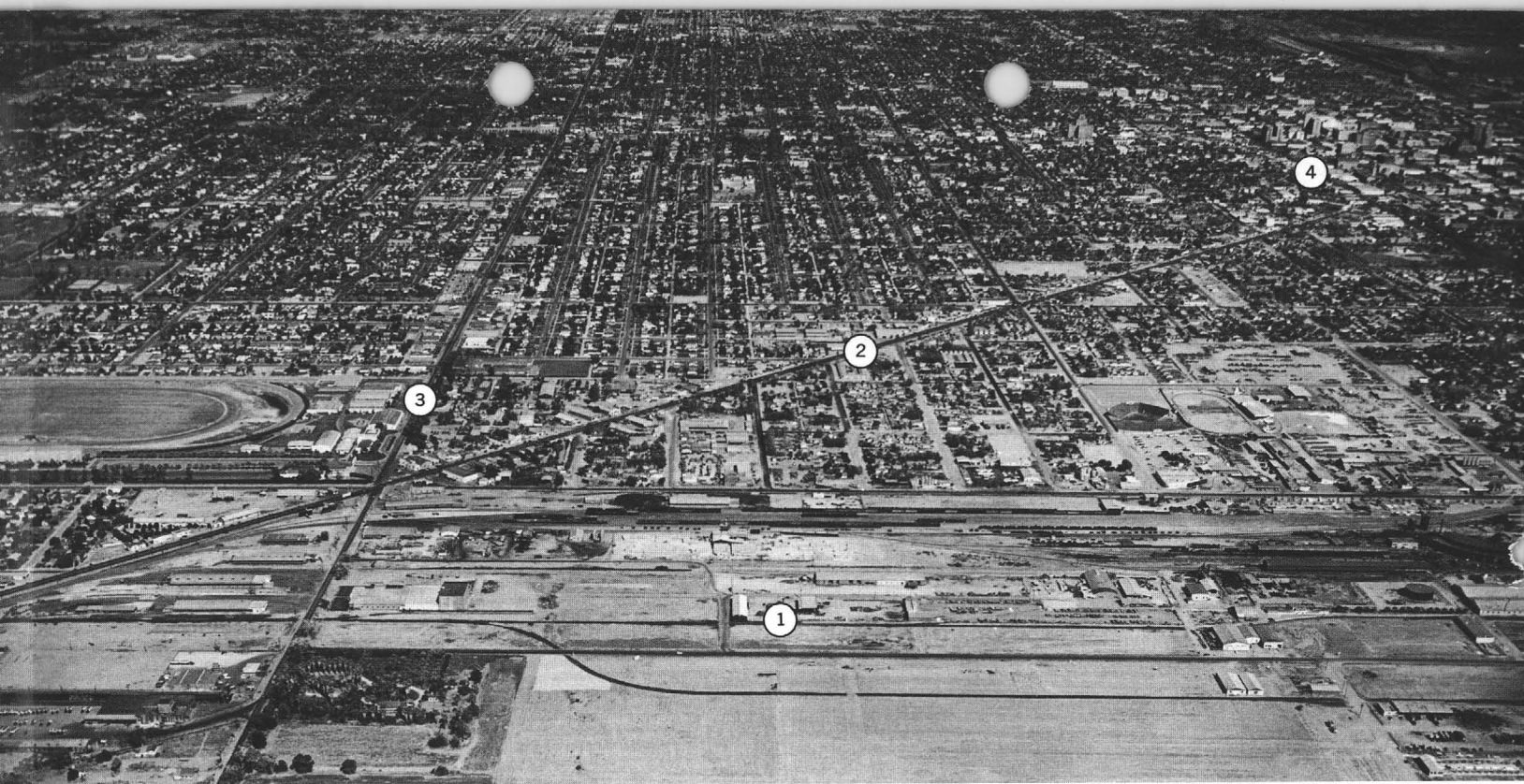
A combination of residential, some industrial and really first-class recreational facilities have suddenly sprouted in the vicinity of *Papago Park* affecting Scottsdale, Tempe and Phoenix.

▼ DECEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 VAN BUREN STREET
- 2 McDOWELL ROAD
- 3 SCOTTSDALE ROAD





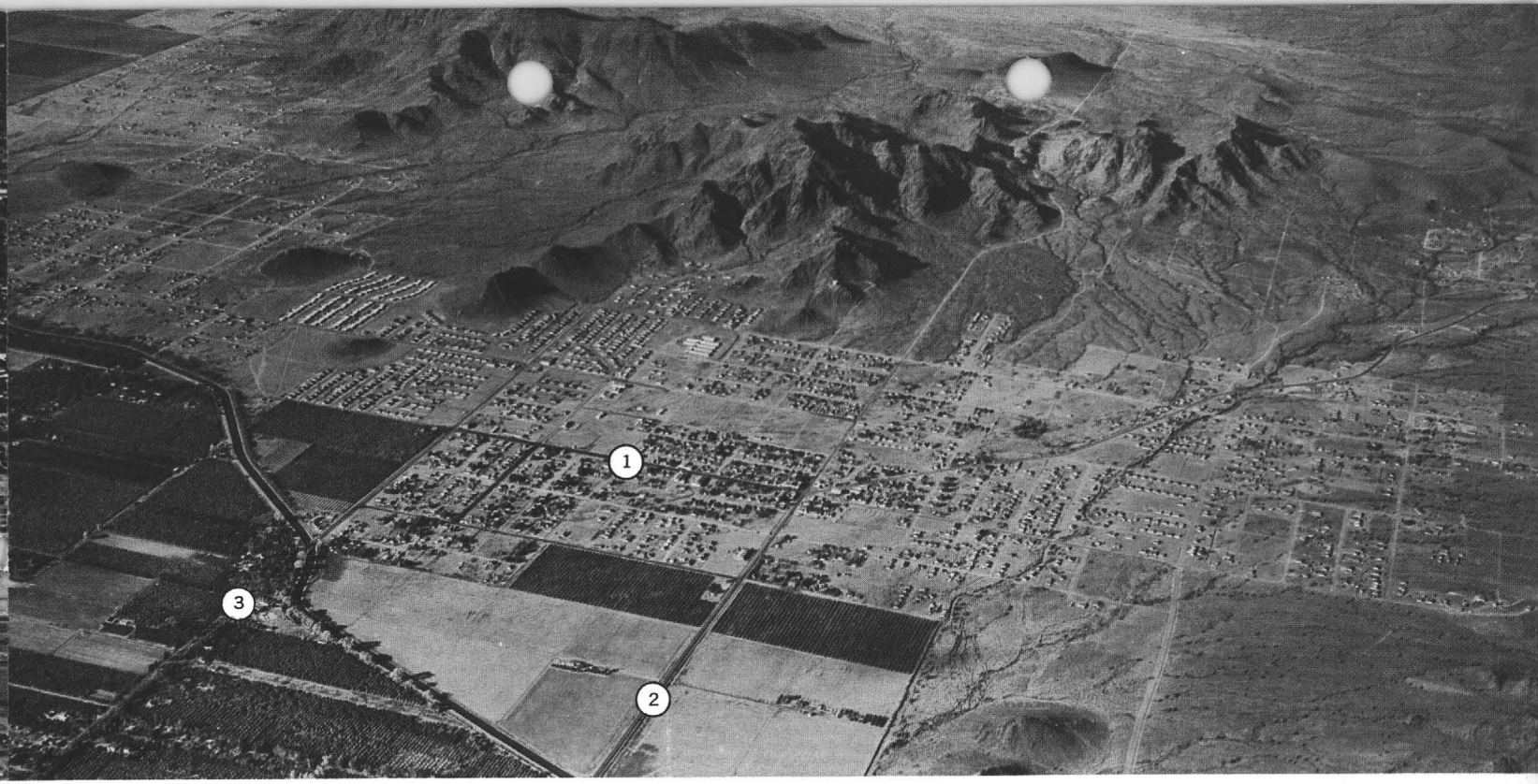
▲ SEPTEMBER, 1948

A new industrial district has taken root and flourished along the Black Canyon Highway in Phoenix. This is Six Points.

▼ DECEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 BLACK CANYON HIGHWAY
- 2 GRAND AVENUE
- 3 McDOWELL ROAD
- 4 VAN BUREN STREET



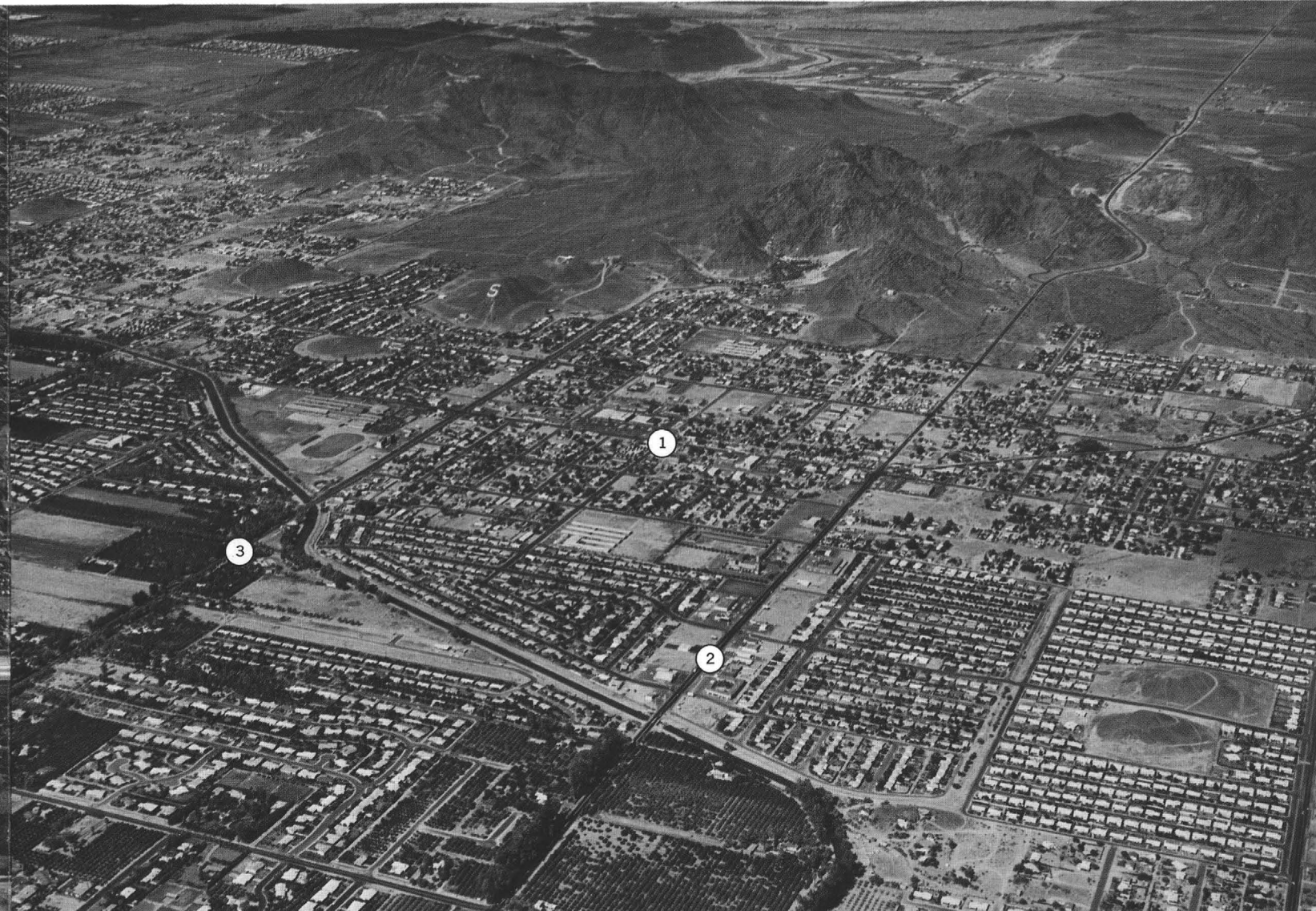
▲ JANUARY, 1950

Sunnyslope, a residential and shopping community, now a part of Phoenix... the change is little short of spectacular.

▼ NOVEMBER, 1962

Photos: Robert Markow, Phoenix

- 1 DUNLAP
- 2 7th STREET
- 3 CENTRAL AVENUE





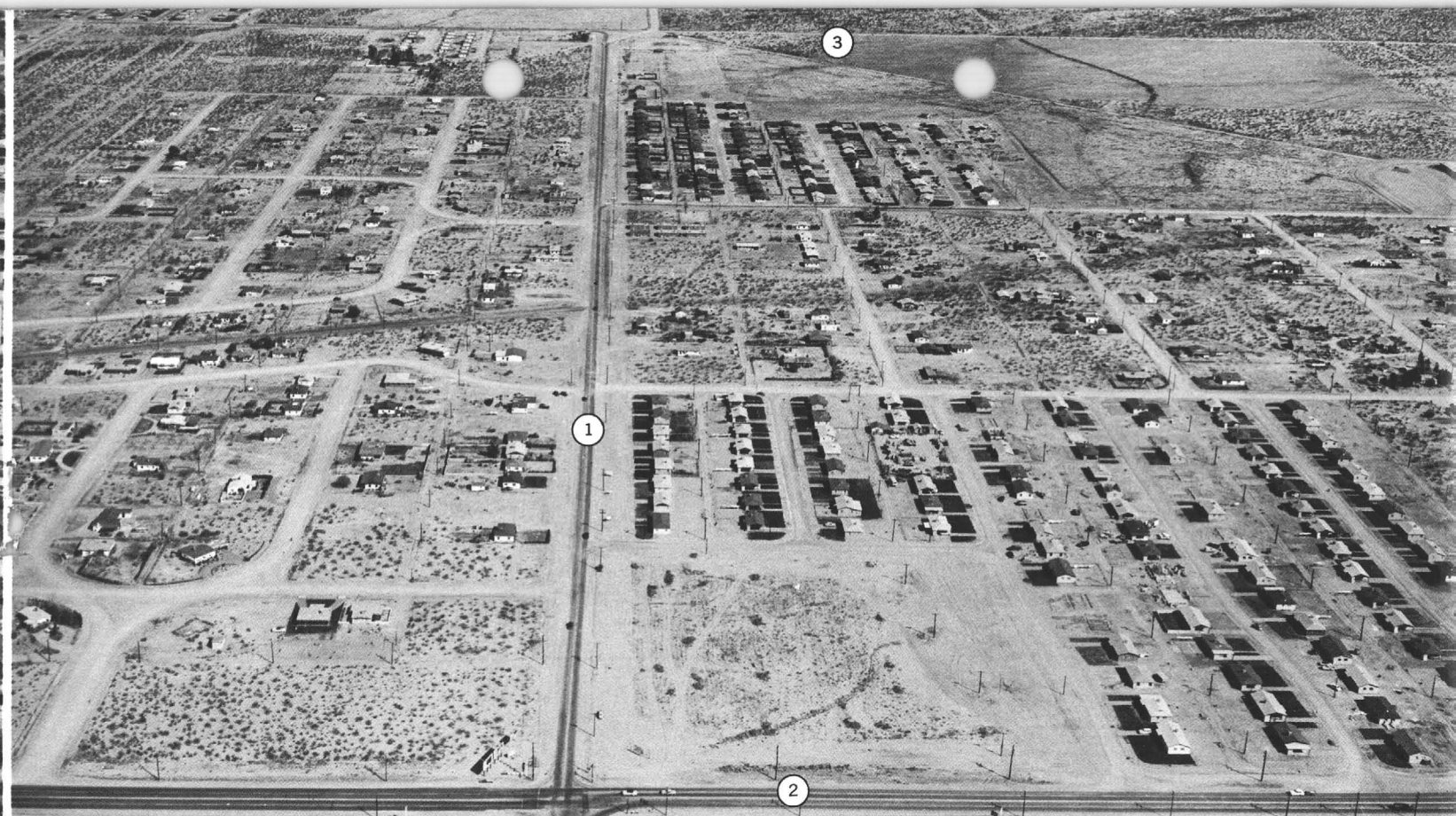
▲ JANUARY, 1954

Downtown Tucson has surged forward with modern office buildings, apartment houses and the necessary re-planned arterial street system.

▼ DECEMBER, 1962

Photos: Ray Manley, Tucson

- 1 STONE AVENUE
- 2 CONGRESS STREET
- 3 ALAMEDA



▲ JANUARY, 1954

East Tucson has exploded into a charming, orderly residential district in nine short years.

▼ DECEMBER, 1962

Photos: Ray Manley, Tucson

- 1 22nd STREET
- 2 CRAYCROFT
- 3 WILMOT



[illegible]

TO COTTONWOOD
CLARKDALE &
JEROME, & TUZIGOOT

PAGE SPRINGS RD

POINTS OF INTEREST
NUMBERED.
(LIST ON OTHER SIDE)

Points of Interest Around Sedona

1. The Chapel of the Holy Cross.
2. Bell Rock and Courthouse Rock.
(Background for many movies)
3. Drive through Oak Creek Canyon.
4. View spot at top of Mogollon Rim.
5. Drive through Boynton Canyon.
6. Devil's Arch, a natural bridge.
7. Picnic at Baldwin's (Red Rock) Crossing.
(Don't forget your camera)

CLIMATE IN RED ROCK LAND

Spring (March-April-May) Average 71.3, average low 43.

Summer (June-July-August) Average high 92.3, average low 62.7

Fall (September-October-November) Average high 77, average low 49.3

Winter (December-January-February) Average high 55.6, average low 31

Average High For The Year 74.

Clear, Clean Fresh Air. Rain Fall 12 to 14 inches per year.

Oak Creek Canyon & Sedona nestles among red, towering cliffs. Its beauty is natural and unspoiled. Here there are good eating places and excellent accommodations in hotels and motels, plus trailer courts, picnic spots and campgrounds.

As Sedona's leading independent real estate agency, Keller Realty has helped bring together hundreds of buyers and sellers during our many years in business here.

Through our association with Previews, Inc., the national real estate clearing house, we offer a complete national real estate service. If you have property to sell or trade anywhere, or if you are looking for just the right property to buy we can help you.

We would be most happy to discuss your real estate needs with you in confidence.

KELLER REALTY

Two convenient offices to serve you:
At the Fountain in Uptown Sedona
and next to the King's Ransom.

One Day Trips from Sedona and Return

	One Way
1. GRAND CANYON	119 Miles
2. PETRIFIED FOREST	139 Miles
3. PAINTED DESERT	139 Miles
4. SUNSET CRATER AND WUPATKI INDIAN RUINS	55 Miles
5. CAMP VERDE (Old Fort)	28 Miles
6. TUZIGOOT (National Monument)	27 Miles
7. MONTEZUMA CASTLE (Cliff Dwelling)	23 Miles
8. JEROME (Ghost Mining Town) ...	31 Miles
9. SNOW BOWL (On San Francisco Peaks)	43 Miles

The Red Rock Country* Welcomes You To

RELAX in our friendly community.

PICNIC at famous Red Rock Crossing.

HIKE, jeep, or go horseback riding over interesting trails in the area.

EXPLORE ghost towns; old mine sites - a challenge to you rockhounds.

FISH in the trout-filled Oak Creek or nearby streams and lakes.

HUNT for big game in the wild Mogollon Rim country.

DRIVE north, south, east and west from Sedona through unsurpassed scenery.

REST and get away from it all in the clear air.

*Where the Desert and the Mountains meet.

WELCOME... to SEDONA and OAK CREEK CANYON

OAK CREEK CANYON and Sedona, located almost in the heart of Arizona on Highway 89A, is the most colorful and breathtakingly beautiful vacation and retirement spot in the U. S. A.

The great out-of-doors is the primary attraction of this still unspoiled playground. There is a sparkling stream winding through the spectacular red rock formations and cliffs and the lush green growth of Juniper, Arizona Cypress, Pinon Pine, Cottonwood, Sycamore and many other trees adds the perfect framing for the red and pink monuments which surround the area.

Deer, elk, antelope, mountain lion, and wild turkey provide sport for the hunter. For the fisherman the trout of Oak Creek are large and plentiful, and they know no season. Hiking, horseback riding, square dancing, rodeos, amateur theatricals are all a part of this fabulous country. There is good swimming in the many natural pools along the creek, as well as artificial pools. This is a photographer's paradise — be sure to bring your camera.

The movie companies have long recognized the spectacular beauty of this area and many productions have been filmed here.

Within a short drive one may see Indian cliff dwellings, visit the ghost mining town of Jerome, explore hidden side canyons, or stand in awe at the wonders of the Grand Canyon and the Painted Desert.

With an altitude of 4300 feet, Sedona and the Canyon have long summers with warm days and cool nights. Spring finds the hills aglow with wild flowers and cacti blossoms. Fall weather is warm and crisp with the Canyon ablaze with autumn color. The short winters are stimulating with an occasional touch of snow to add frosting to the red sandstone cliffs.

This is the sort of place you will come to spend a day or a week and want to stay forever.



City of Phoenix Directory of Services & Information

Traffic Signs
(Installation, Damage Report) 262-6235

Trees 262-6501
(Trimming, removal or permit for planting
in right-of-way; donations)

Volunteers
Aging Services 262-7379
Boards and Commissions 262-7111
City Court Probation Services 262-7504
Headstart Program 262-4044
Human Resources 262-6844
Libraries 262-7939
Parks/Recreation 262-4541
Police Reserves 262-6188

Voter Registration
(Maricopa County) 262-1511

Water
New Accounts, Terminations 262-6521
Pressure or Quality 262-6365
Water Bills (Current) 262-6251
Water Bills (Past due), Turn-offs 262-6515
Water Main Leaks, Broken Hydrants 262-6288
New Water Meters 262-6551

Youth Programs 261-8550

Zoning
Rezoning Applications 262-7131
Variances and Use Permits 262-7405
Violation Complaints 262-7844

Emergency Numbers (24-hour service)

Accident Cleanup 262-6441
Crime Stop (Police) 262-6151
Crisis Intervention 258-8011
Drug Abuse (Terros Hotline) 252-6021
Fire Report 253-1191
First Aid Emergency ("Lifeline") 253-1191
Information (City Switchboard) 262-6011
"Lifeline" First Aid Emergency 253-1191
Parks Night Emergency 262-6386
Police (Crime Stop) 262-6151
Poison Control 253-3334
Rumor Control 262-6996
Sewers Clogged
Sanitary Sewers
(Weekdays) 262-6691
(Nights, Sundays, Holidays) 262-6288
Storm Sewers 262-6441
Water Main Leaks, Broken Hydrants 262-6288



Have a problem? Need information about your City? This guide should assist you in getting answers to your questions and action on problems regarding City services.

Abandoned Vehicles
On Private Property 262-7844
On Streets 262-6151

Airport Paging for Passengers
Sky Harbor International Airport 273-3377
(For flight schedules, call airlines)

Alleys
Abandonment 262-6775
Construction Debris 262-6441
Dust from Traffic 262-6441
General Repair or Grading 262-6441
Hazard in Alley 262-6441
Permit for Oiling 262-6441
Request for Opening (See Garbage and
Trash Collection)

Animals
Barking Dogs 262-6461
Dead Animal Pickup 262-6791
Dog Licenses, Rabies/Animal Control
(Maricopa County) 269-3491
General Information (Maricopa County) 269-3491
Horse or Dog Droppings (See Garbage and
Trash Collection)

Horses — Lot Too Small 262-7847

Annexations 262-6837

Arson
To report arson-caused fires 26-ARSON

Auctions, Public 262-7181

Bicycle Licensing
Location of nearest fire station 262-6297

Building Inspection and Permits
(See Construction Permits)

Buildings, Structurally Unsafe
To Report — Occupied 262-7821
To Report — Vacant 262-6911

Bus Service
Schedule Information 257-8426
General Calls 262-7242
Sunday Dial-A-Ride 271-4545

Business Licenses 262-4638

Cable-TV
If problems aren't resolved by
cable companies 262-6051

**Central Phoenix
Redevelopment Agency** 262-5033

Citizens' Assistance Office 262-7777

City Clerk 262-6811

City Council 262-7029

City Courts
(See Municipal Courts)

City Manager 262-6941

City Prosecutor 262-6461

City Treasurer, Assessor 262-6216

Civic Plaza 262-6225
Box Office 262-7272

Claims Against the City 262-5054

Construction Noise 262-6151

Construction Permits
On Private Property 262-7884
On Right-of-Way 262-6821

Crisis Intervention (24 hours) 258-8011

Developers' Assistance 262-4425

Development Coordination Office 262-7306

Discrimination Complaints 262-7486

Drainage
Clogged Street Drain 262-6441
Drainage Improvement 262-6821

Dust
From Construction Activity 258-6381
(Maricopa County Health Dept.—
Air Pollution Control)
From Parking Lot 262-7844
From Right-of-Way Construction 257-9599
From Vehicle on Vacant Lot,
Illegal Alley Traffic 262-6151

Elections (City of Phoenix) 262-6811

Employment
City Job Information (Recorded) 262-7356
City Personnel Dept. — General Information 262-6277

**CETA Job Training and
Placement Information** 262-6776

Fences
In the Right-of-Way 257-9599
Built in Easements, Without Permit
or Too High 262-7884

Fires	
To Report Fires	253-1191
Code Enforcement	262-6771
To Report Hazards	262-6771
First Aid Emergencies ("Lifeline")	253-1191
Flood Information	
(In the Event of Floods	
Within City Limits)	262-6811
Flooding — Streets and Alleys	262-6441
(After 5 p.m., Saturday, Sunday, Holidays)	262-6011
Garbage and Trash Service	
Inspection, Complaints and Requests for Service —	
Contact your area service center:	
NORTHEAST DISTRICT - East of 7th Avenue	
north of Camelback Road and locations	
north of Cactus Road	261-8720
NORTHWEST DISTRICT — West of 7th	
Avenue between Indian School	
Road and Cactus Road	262-7151
SOUTHEAST DISTRICT — South of	
Camelback Road, east of 7th Street	262-6281
SOUTHWEST DISTRICT — South of Indian	
School Road, west of 7th Street	262-6791
Landfill Information	253-7345
Hazardous Materials	255-1160
(Disposal of Acids, Chemicals, Ammunition,	
War Souvenirs)	
Home Safety Inspection	262-6911
Housing	
Assistance for Low Income	262-6952
Public Housing Request	262-6952
Relocation Assistance	262-7389
House Number Information	262-6551
Human Resources	
Community Service Centers	
#1 — 4732 South Central	268-0211
#2 — 1250 South 7th Avenue	258-8011
#3 — 1818 South 16th Street	257-1975
Information	262-6844
Neighborhood Organization Division	262-6705
Illegal Dumping	
Dirt or Filling of Washes	262-6151
Trash — (See Garbage and Trash Service).	
Information (City Switchboard)	262-6011
Irrigation Flooding	262-6442
Libraries	
Central Library	262-6451
12 East McDowell Road	
Acacia Branch	262-6223
750 East Townley Avenue	
Century Branch	262-7411
1750 East Highland Avenue	
Cholla Branch	262-4776
10050 Metro Pkwy East	
Harmon Branch	262-6362
411 West Yavapai Street	
Mesquite Branch	262-7298
3201 East Bloomfield Road	
Ocotillo Branch	262-6694
102 West Southern Avenue	
Palo Verde Branch	262-6805
4402 North 51st Avenue	
Saguaro Branch	262-6801
2808 North 46th Street	
Yucca Branch	262-6787
5648 North 15th Avenue	
Bookmobile	262-6560
Overdue books	262-6402
"Lifeline" — First Aid	
Emergency Service	253-1191
Liquor Permits	262-4638
	or 262-4809
Lot Cleaning	262-6911
Mayor's Office	262-7111
Municipal Courts	
Arraignment Information	262-7182
General Information	262-6421
Jury Information (Maricopa County)	262-3331
Release Without Bond (Own Recognizance)	262-6706
Traffic Court Information	262-6421
Trial Continuation	262-6213
Neighborhood Improvement	
Districts	262-6781
Odor — Industrial and Commercial	
Maricopa County Health Dept. —	
Air Pollution Control	258-6381
Parks and Recreation	
Adult Centers	
See Senior Citizen Programs	
Arts and Crafts	262-4627
214 East Moreland	

Cultural Activities	262-4627
Desert Mountain Parks	276-2221
(Echo Canyon, Papago, Squaw Peak, North	
and South Mountain Parks — Group	
reservation at latter three).	
Director, Superintendents	262-6861
Golf Classes and Clinics	262-6483
Golf Courses (General information)	262-6861
Encanto (18 hole)	253-3963
Encanto (9 hole)	262-6870
Maryvale	846-4022
Papago	275-8428
Night emergency	262-6386
Parks — Listed under "Phoenix City	
Government" in your telephone directory	
Performing Arts Building	262-4627
1202 North 3rd Street	
Pueblo Grande Indian Ruins	275-3452
4619 East Washington	
Recreation Program Information	262-6412
Sports Activities	
Men's	262-6483
Women's	262-6485
Swimming (Seasonal) — Pools are listed under	
"Phoenix City Government" in your telephone	
directory.	
Tennis Center	262-6511
6330 North 21st Avenue	
Police	
Accident Records	262-7211
Crime Stop (Emergency Calls)	262-6151
Criminal Investigations	262-6141
Community Relations	262-7331
Operation Identification	262-7331
Block Watch	262-7331
Information about City Prisoners	256-1040
Silent Witness	261-8600
Private Property	
Legal Descriptions	262-6878
Ownership Information	262-6878
Property Lines	262-6828
Plan Coordination	262-7306
Purchasing	
(Prospective City Suppliers)	262-7181
Rumor Control	262-6996
Sanitation Billing Information	262-6251
Senior Citizens Programs	262-7379
Dial-A-Ride	262-4501
Golden Senior Discount Card	262-7379
Los Olivos Adult Center	256-3130

South Phoenix Adult Center	262-4874
Washington Adult Center	262-6971
Sewers (Sanitary)	
Clogged sanitary sewers or roaches in sewers	
(Weekdays, 8 a.m. to 5 p.m.)	262-6691
(Nights, Sundays, Holidays)	262-6288
Sanitary Sewer Improvement Districts	262-6781
Sewer Tap Application	262-6551
Sewer Billing Information	262-6251
Sewers (Storm)	
Clogged	262-6441
Sign Enforcement and Permits	262-7822
Social Problems	257-1975
(Emergency Food, Clothing, Transportation,	258-8011
or Counseling)	or 268-0211
Solicitations Information	262-8903
Special Assessment Payments	262-6876
Street Lighting	
Installation	262-6235
Report of Damage or Malfunction:	
Arizona Public Service Company	258-8711
Salt River Project	267-9161
Streets	
Abandonment	262-7137
Cleaning (Including Glass, Accident Debris)	262-6441
General Repair or Grading	262-6441
Neighborhood Improvement Districts	262-6837
Request for Closure	262-6235
Request for Marking Streets and Crosswalks	262-6235
Single Street Improvement	262-6781
Visibility Blocked at Intersection	262-6235
Subdivision and Lot Splits	
Subdivision	262-7306
Lot Splits	262-7137
Taxes	
Privilege License (Sales)	
and Use Tax	262-6785 or 262-7033
Property Taxes (County)	262-8511
Traffic and Parking Problems	262-6235
Traffic Court	262-6421
Traffic Safety Coordination	262-1650
Traffic Signals	
Request for Installation	262-6235
Report of Damage or Malfunction:	
(Weekdays)	262-6731
(Nights, Weekends, Holidays)	262-6151

THE VALLEY BANK'S NINETY-TWO OFFICES

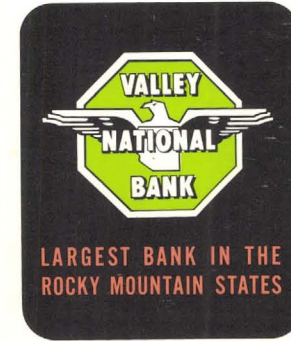
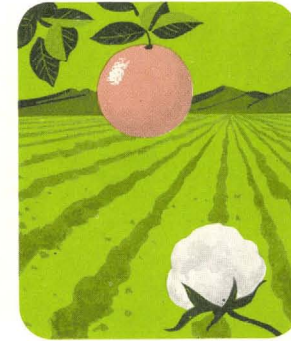
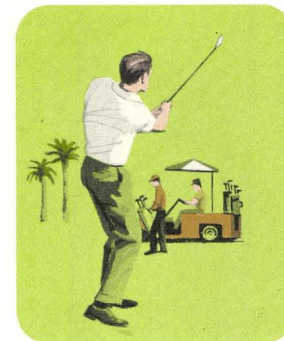
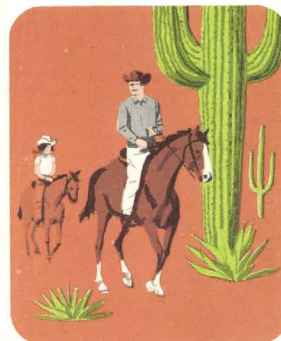
HENRY CRUM			AJO	Manager	PHOENIX			GUS RODRIGUEZ			SAN LUIS			Manager
CLARENCE FINCH			BAGDAD	Manager	HOME OFFICE: Professional Bldg.—141 North Central Avenue J. C. BALDWIN Sr. Vice-President & Manager			ROBERT L. SEARCY			SAN MANUEL			Manager
DEAN T. MALAN			BUCKEYE	Manager	CAPITOL CHARLES W. GREEN Manager			LEONARD W. HUCK			SCOTTSDALE Downtown Vice-President & Manager			
WILLIAM J. BOWMAN			BULLHEAD CITY	Manager	CENTRAL-CAMELBACK E. L. DOERING Manager			WILLIAM KAUOL			Scottsdale-Shea Manager			
CRAIG MERRILL			CAMP VERDE	Manager	CENTRAL-SOUTHERN R. W. HASSERIES Manager			RICHARD COLVILLE			74th Street-McDowell Manager			
C. F. HINTZE			CASA GRANDE	Vice-President & Manager	EAST VAN BUREN STREET WM. E. KANTZ Manager			E. N. BLAKE			SHOW LOW Manager			
CARLL T. GLEASON			CAVE CREEK-CAREFREE	Manager	INDIAN-CENTRAL R. V. SABECK Vice-President & Manager			WILLIAM A. KENYON			SUPERIOR Manager			
D. DAVID			CHANDLER	Vice-President & Manager	LUHRS BUILDING ROBERT BELT Manager			JAMES G. GARDNER			TEMPE Manager			
CLAUS W. LAGE			Williams A. F. B. Facility	In Charge	MOTOR BRANCH See Home Office			PETER FALBO			TOLLESON Manager			
O. M. SIZER			CLIFTON	Manager	PARK CENTRAL FRANK E. KENNISTON Manager			TUCSON						
GLENN L. RUTH			COOLIDGE	Manager	SECURITY BLDG. See Home Office									
RAYMOND BRADSHAW			DOUGLAS	Manager	SUNNYSLOPE E. G. NEWTON Manager			DOWNTOWN OFFICE: Valley National Bldg.—2 East Congress G. F. BRADLEY Sr. Vice-President & Area Manager			TUCSON DEPARTMENTS Loaning Divisions Commercial, Agricultural and Livestock Loans G. B. POND Vice-President Installment Loans K. E. JOHNSON Assistant Vice-President Mortgage Loans F. R. GUTHMANN Vice-President Business Development WM. H. SMITH Assistant Vice-President Trust FRANK M. VOTAW Vice-President Operations and Personnel J. R. HENDERSON Vice-President			
NORMAN E. CROCKETT			DUNCAN	Manager	TOWER PLAZA HARRIS WOOD Manager									
W. V. BORCHERDING			FLAGSTAFF	Downtown Vice-President & Manager	WESTOWN JAMES SHIKANY Manager			CAMPBELL-GRANT RICHARD HILL Manager			GOVERNOR'S CORNER MYRON GOLDBERG Manager			
QUENTIN D. BIGGINS			East Flagstaff	In Charge	WEST VAN BUREN STREET ELMER T. SCHALL Vice-President & Manager			ORACLE-GRANT RAYMOND O. PLUNK Manager			SOUTH TUCSON P. S. RISEL Manager			
EVAN E. HAUB			GILA BEND	Manager	WILLETTA-FIRST STREET T. A. GOODNIGHT Vice-President & Manager			SPEEDWAY-SWAN LOUIS J. GABRIEL Manager			22ND STREET-WILMOT ROSS ROBISON Manager			
JACK COCHRAN			GLENDALE	Downtown Manager	7TH AVENUE-THOMAS RD. T. J. ANDERSON Manager			UNIVERSITY HOWARD IZARD Manager			WICKENBURG RICHARD D. HIGHT Manager			
W. J. SAMUELS			47th Avenue-Glendale	Manager	7TH STREET-GLENDALE JOSEPH K. BLEDSOE Manager			H. T. LUNT			WILLCOX Manager			
GORDON LATIMER			39th Avenue-Camelback	Manager	16TH STREET-BUCKEYE RICHARD WRIGHT Manager			R. B. LAYCOCK			WINSLOW Manager			
JACK MASK			GLOBE	Manager	16TH STREET-CAMELBACK DALE L. KOBER Manager			TAYLOR SMITH			YOUNGTOWN-SUN CITY Manager			
DONALD J. MORRIS			GRAND CANYON	Manager	19TH AVENUE-BETHANY HOME RD. D. W. KIRKMAN Manager			ROY R. YOUNG			YUMA Main Street Vice-President & Manager			
JACK D. WHITE			GREEN VALLEY	Manager	19TH STREET-MCDOWELL WAYNE KOENIG Manager			W. R. ESMEIER			4th Av.-16th St. Manager			
S. W. CURTIS			HAYDEN	Manager	21ST AVENUE-MCDOWELL LEONARD E. KLINE Manager									
ALEX SANCHEZ			Kearny	Manager	24TH STREET-THOMAS RD. B. H. THOMPSON Manager									
W. R. FAIRALL			KINGMAN	Manager	28TH STREET-WASHINGTON JERE J. BROMMER Manager									
EARL J. KING			LAKE HAVASU	Manager	32ND STREET-SHEA BLVD. LAMAR WELKER Manager									
PHIL PHILLIPS			LITCHFIELD PARK	Manager	33RD AVENUE-INDIAN SCHOOL RD. GEORGE BRAMAN Manager									
WILLIAM J. ASHER			MESA	Main Street Vice-President & Manager	35TH AVENUE-BETHANY HOME RD. THOMAS N. PICKARD Manager									
A. S. WAHL			West Side	Manager	40TH STREET-CAMELBACK WM. LOFFER Manager									
E. C. PICKREL			Velda Ross	Manager	43RD AVENUE-THOMAS RD. GORDON ANDERSON Manager									
CHAS. O. CLARK			MIAMI	Manager	PIMA NYLE CLIFFORD Manager									
K. O. BERRY			MORENCI	Manager	PRESCOTT V. E. SWANSON Vice-President & Manager									
W. G. WILCOX			NOGALES	Vice-President & Manager Nogales—Motor Branch—See Nogales	SAFFORD DONALD J. WELKER Vice-President & Manager									
ROBERT E. SCHMIDT			PAYSON	Manager	ST. JOHNS DALE M. WOLFORD Manager									



YOUR HELPFUL BANK
Resources Over \$1 Billion



"ABOUT ARIZONA..."



prepared and distributed by the Valley National Bank

This is the fifth successive year we have distributed this booklet. Many hundreds of thousands of them have been sent to all corners of our nation and all over the globe.

We grew up with this state . . . and have continually gathered and disseminated information for as long as anyone can remember. So, we were surprised to find the enormous demand for this "semi-formal" brochure.

For some 66 years we have simply (and gladly) answered questions about the state, as a matter of course. Today, however, there are so many welcome new arrivals, we find it both expedient and necessary to at least summarize answers to the "most asked" questions.

While you will find these condensed facts and figures answer many of your questions, we hasten to remind you that our managers all over the state are ready, willing and able to amplify on their local areas.

We have a full-fledged Research Department which collates data from Federal, state and municipal sources, as well as consolidating the perpetual flow of information from our state-wide branches.

So for further or more detailed intelligence about Arizona, please feel free to drop in at any Valley Bank office! And address all written inquiries to the Research Department, Valley National Bank, P. O. Box 71, Phoenix, Arizona 85001.

of our economy. We make loans for all types of livestock and agricultural businesses. In addition our loan officers will be glad to supply information regarding range conditions, market prices and information on Government regulations affecting agriculture.

Modernization Loans enable homeowners to modernize, repair, improve — with *no* down payment — and up to 5 years to repay. These loans cover materials, for "do-it-yourself" borrowers, or materials *and* labor if you prefer to hire the work done. Simply bring an estimate of the costs involved to your nearby Valley Bank Office. Fast action is guaranteed! Many dealers are set up to handle VNB modernization loans for you.

Mortgage Loans are available to buy or build . . . or to refinance an old mortgage. Payments may be spread over many years and each payment reduces the principal and covers interest, taxes and fire insurance.

PERSONAL MONEY ORDERS

Valley Bank Personal Money Orders are easy to buy, easy to cash; one low price for any amount up to \$200. In addition to being available at all offices, they may also be purchased at leading neighborhood stores throughout the state.

TRAVELERS CHECKS

The only safe way to travel — anywhere — is to carry your travel cash in Travelers Checks. Easy to cash, but only by the rightful owner, they cost just 1% of face value. If they are lost or stolen, you get a refund *in full*.

SAFE-KEEPING FACILITIES

The Valley Bank offers a wide variety of safe-deposit boxes to protect your valuable heirlooms, keepsakes, important documents, etc. You get 'round-the-clock protection against fire, theft and prying eyes. These boxes are rented in various sizes, and costs range from about a penny and a half a day.

AUTO FINANCING

When you're in the market for a car, new or used, take advantage of the Valley Bank's "Dealer-Finance Plan." Most automobile dealers in Arizona will gladly arrange for VNB financing on the spot, for they know they can

get fast loan approval and can give you the low VNB rate. The cost of your auto insurance can be included in the contract.

INVESTMENT DEPARTMENT

To buy or sell *tax exempt* municipal bonds, U. S. Government or Agency bonds; to execute orders for corporate bonds or stocks; or to counsel with our investment officers, call or contact the Investment Department (Home Office). Our complete facilities and extensive wire communications to all local and national markets, together with the long experience and know-how of our investment officers are available to help you.

INTERNATIONAL BANKING DEPARTMENT

This Department offers world-wide Travelers Letters of Credit; Import and Export Letters of Credit; Financing of Foreign Trade and Foreign Credit Information. Through our network of correspondent banks we can offer you complete, international banking services.

TRUST DEPARTMENT

The Valley Bank Trust Department offers *complete* trust services: Executor, Co-Executor or Alternate Executor appointments under Wills; Administration of Estate of deceased persons; Guardian of estates of minors or incompetents; Trustee under Wills or Living Trusts; Agency or Custodian Appointments. For corporations, we serve as Trustee and Paying Agent of bond issues, Transfer Agent and Registrar of stock issues and Trustee under pension and profit sharing plans. Our Trust Officers are experienced and qualified experts who welcome an opportunity to analyze your estate — without cost or obligation — and make their studied recommendations.

RESEARCH DEPARTMENT

This department prepares a monthly business bulletin and an annual Statistical Review which contain a wealth of economic information on our state. These publications are available to all interested parties without cost. In addition, this department will gladly assist in making business surveys or supplying information on any phase of the Arizona economy.

The Valley Bank Can Serve You in Many Ways . . .

SAVINGS ACCOUNTS

The safe, sure, easy way to accumulate money for the things you need and want — and for your future security and independence — is to open a savings account and add to it regularly. Your money on deposit is *always* available when you want it, and there is *no* maximum limit for which interest will be paid. We also issue Certificates of Deposit and offer various specialized savings plans *including monthly automatic transfer from checking to savings.*

4% daily interest from day of deposit to day of withdrawal, and all interest is compounded quarterly.

NO BANK CAN PAY MORE!

The Valley National Bank is a member of the Federal Deposit Insurance Corporation and all accounts maintained in the same right and capacity are fully insured up to \$10,000.

In the case of married couples, their insured coverage may total as much as \$40,000, if divided as follows:

1. Account in name of husband	\$10,000
2. Account in name of wife	10,000
3. Joint account in survivorship form	10,000
4. Account in name of husband and wife, community funds	10,000
Total amount insured	\$40,000

CHRISTMAS CLUB

Choose the deposit plan that suits your budget, make regular deposits every payday and *next* November you will automatically receive a Christmas Club check for the full amount — \$25, \$50, \$100, \$150, \$250, or \$500 — and have a paid-for Merry Christmas!

CHECKING ACCOUNTS

Paying by check is the safe, convenient way to handle your funds. Your money, on deposit in the bank, is safe from every hazard . . . your canceled checks, returned to you by the bank, are ideal legal receipts . . . your check stubs show you where every cent has gone, helping you establish a budget

and serving you well at income-tax time.

All checking account customers may have their checks "personalized" at very low cost. These specially-designed checks are imprinted with your name and address, assuring you of proper crediting of your account . . . helping identify you when cashing checks in places where you are not well known . . . lending an air of prestige to your business transactions.

The Valley Bank offers a checking account to suit every personal and business need. There is no service charge on regular personal accounts with a minimum balance of \$500 or more. In addition to the regular accounts we have a Special Checking Account service requiring *no minimum balance*. You can open an account with *any* amount, and keep just enough money on deposit to cover the checks you write. Your only costs: 10¢ for each check paid, plus 25¢ a month maintenance charge.

LOAN SERVICES

Instalment Loans. Personal Loans are available in any amount, with repayment tailored to fit your budget. You get fast, confidential service — at the traditional low VNB rate. (We made our *two-millionth* instalment loan in November of 1964.)

Automobile and "big ticket" home furnishing financing may be obtained without delay simply by asking your dealer for Valley Bank Financing. Whether you're purchasing a new or used car, color TV set, piano, boat, washer-drier, etc., your dealer will get you immediate approval at the VNB rate.

Commercial Loans are keyed to the requirements of the individual business; short-term loans repayable in a lump sum; longer-term loans repayable in instalments out of current income.

Agricultural & Livestock Loans. Through many years of experience our loan officers have gained a wide knowledge of this important segment

Table of Contents

Arizona Information Service	PAGE
"About Arizona . . ."	2
Map of State	4
Cost of Living	5
Cost of Housing	6
Taxes	7
Employment	9
Schools & Education	12
Community Property Laws	15
Land	16
Traffic Laws & Registration	18
Retirement	19
Indians	20
Mexico	22
Where Arizonans Came From	24
National Forests, Parks and Monuments	25
Hunting & Fishing	26
Statistics	28
Useful Phone Numbers	34
VNB Services	36

"About Arizona..."

Arizona defies labeling. How can you sum up a state where you can:

- climb out of your backyard pool in Tucson and go skiing on the slopes of Mount Lemmon within the hour . . .
- play golf or tennis in Phoenix till noon, and by two o'clock be driving through snow on Black Canyon Highway . . .
- mingle with a metropolitan throng, dine in a renowned restaurant, yet an hour later stand serenely in desert stillness.
- drive for hours through mountain forests of pine, spruce, fir and aspen, then return home to plant palms, hibiscus and bougainvillea . . .
- tour a modern library, art museum or computer center in the morning, visit a ghost town or prowl prehistoric ruins in the afternoon . . .
- see winter headlines, naming Maverick the coldest spot in the nation; summer headlines shouting Yuma the country's hottest community . . .
- visit towns where gunfighters fought without sound cameras, and drive through desert lands where yearly, real estate transactions have created fortunes . . .



TUCSON

Highway Patrol	624-8811
Motor Vehicle Division	622-4701
Tax Commission	622-8833

PHOENIX

Civil Service Commission	261-3900
Indian Affairs (Phoenix Area Office)	261-3900
Bureau of Land Management	261-3551
Post Office Department	261-3300
Small Business Administration	261-3611
Social Security Administration	261-4241
Internal Revenue Service	258-6931
Veterans Administration	261-3900

TUCSON

Civil Service Commission	623-7731
Post Office Department	623-7731
Social Security Administration	623-7731
Internal Revenue Service	623-7761
Veterans Administration	792-1450

PHOENIX

Arizona Public Service	271-7900
Salt River Project	273-5900
Mountain States Tel. & Tel. Co.	258-3611
Phoenix Chamber of Commerce	254-5521
Valley National Bank	261-2900

TUCSON

Mountain States Tel. & Tel. Co.	624-1711
Tucson Gas, Elec., Light & Power Co.	327-5581
Tucson Chamber of Commerce	624-8111
Tucson Sunshine Climate Club	624-8111
Valley National Bank	624-8711

TEMPE

Arizona State University	966-3011
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TUCSON

University of Arizona	624-8181
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Of course, there are many other phone numbers that should be listed—and many other important communities—which we just haven't the space to provide.

CITY OFFICES

City Hall and most Phoenix offices

258-7313

City Hall and most TUCSON offices

791-4911

COUNTY OFFICES

Court House	262-3204
Administrative Offices	262-3204
Automobile License Plate Department	272-5511
Parks and Recreation Department	262-3711

Court House	623-6971
Administrative Offices	623-6971
Automobile License Plate Department	623-6971
Recreation Department	623-6971

STATE OFFICES

Arizona Development Board	271-4431
Arizona State Employment Service:	
Professional Sales & Clerical	254-5631
Industrial Occupations	258-1621
Game & Fish Department	271-4295
Governor's Office	271-4331
Health Department	271-4900
Highway Department	261-7011
Driver's License Division	261-7401
Highway Patrol	262-8011
Motor Vehicle Division	261-7011
Library and Archives	271-5101
Public Instruction, Department of	271-4900
Secretary of State	271-4286
Tax Commission	271-4470

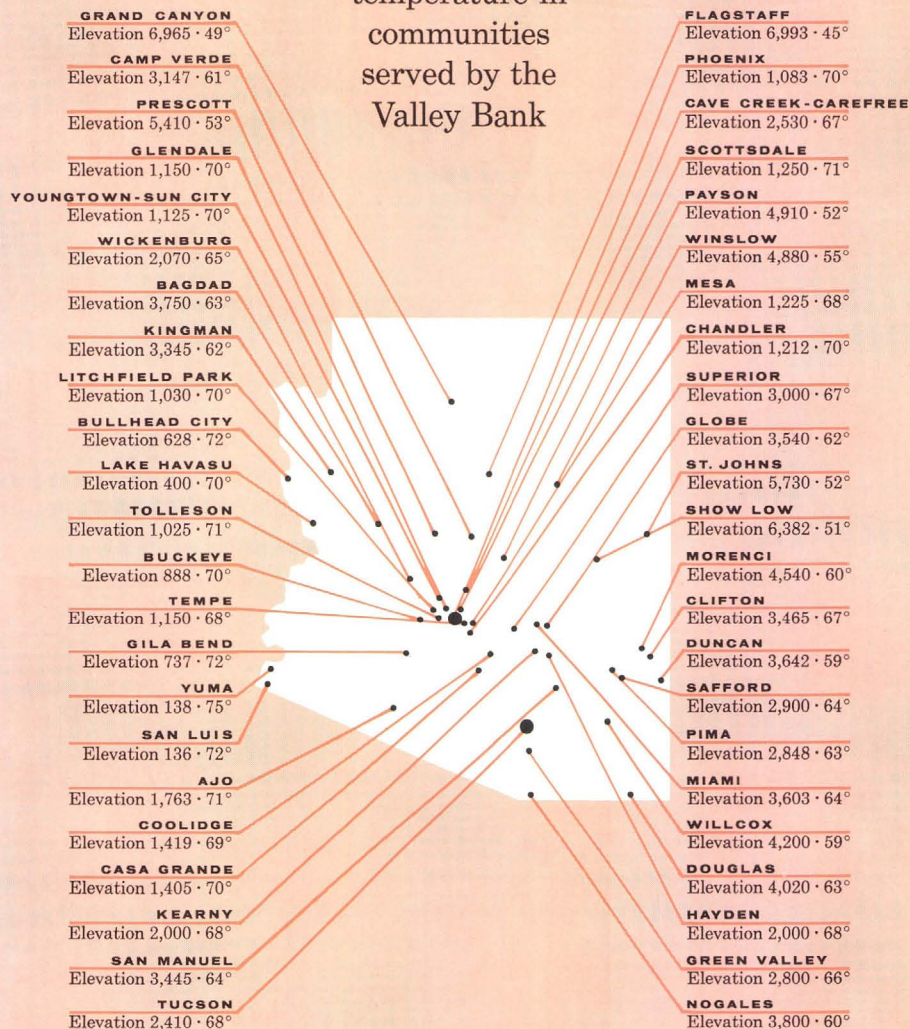
Arizona State Employment Service:	
Professional Sales & Clerical	622-6692
Industrial Occupations	622-6692
Game & Fish Department	624-4951
Highway Department:	
Driver's License Division	624-2543



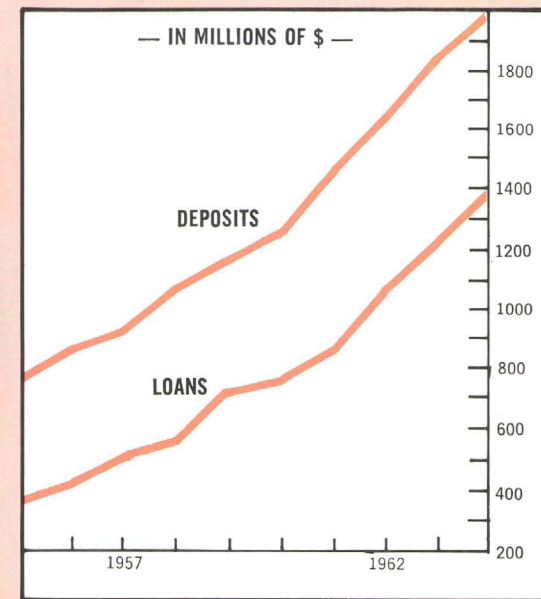
- find schools so famed that students come from all over the globe . . .
- meet men in Levis who may be gardeners, but could be cotton or cattle ranchers who haul supplies in the back of a Coupe de Ville . . .
- distinguish real-life cowboys from dudes only because they look less flashy and are a good bit leaner . . .
- have neighbors who could be small businessmen or nationally-famed artists, writers, publishers, builders or board chairmen . . .
- find little rainfall and even less humidity in one part, yet an almost predictable daily shower in another . . .
- see year-round farming and city lawns irrigated from a series of man-made lakes . . .
- go to concerts and enjoy city recreations, or hunt deer, bear, cougar and javelinas, or go boating, prospecting or picnicking in desert or mountains any weekend . . .
- ask folks who have settled here about returning “home” and hear, “*Leave this climate? I wouldn’t go back to be buried!*”

It's been aptly called: "The land of room enough and time enough, with everything under the sun to see and do." But most important, as those of us who have made the move can tell you, Arizona offers *a new and better life for all!*

Elevation and mean temperature in communities served by the Valley Bank



GROWTH OF BANK DEPOSITS AND LOANS



DEPOSITS AND LOANS OF ALL ARIZONA BANKS

Year-End	Total Deposits	Loans and Discounts	Ratio Loans To Deposits
1955	\$ 757,782,163	\$ 371,953,372	49.1%
1956	858,857,264	434,001,073	50.5
1957	911,085,419	517,423,463	56.8
1958	1,042,554,171	570,529,220	54.7
1959	1,170,228,785	718,023,613	61.4
1960	1,272,408,346	758,467,912	59.6
1961	1,453,413,996	859,174,265	59.1
1962	1,633,221,771	1,061,008,801	64.9
1963	1,806,347,079	1,207,270,639	66.8
1964	1,970,219,036	1,358,105,295	68.9

Source: U. S. Weather Bureau

DISTRIBUTION OF FARM ACREAGE BY COUNTIES — 1963

County	Alfalfa	Citrus	Cotton	Grains	Vegetables	Total (*)
Apache . . .	2,000	—	—	3,060	300	6,260
Cochise . . .	13,200	—	13,850	42,760	4,400	79,610
Coconino . . .	600	—	—	1,910	—	6,910
Gila	300	—	60	150	—	910
Graham . . .	5,700	—	25,380	8,410	50	40,840
Greenlee . . .	1,000	—	1,660	2,080	100	5,440
Maricopa . . .	97,000	14,000	145,800	140,800	54,000	509,400
Mohave . . .	2,500	—	268	400	220	4,288
Navajo . . .	4,800	—	—	10,910	700	17,810
Pima	2,300	50	26,525	16,240	500	48,815
Pinal	18,500	125	141,200	73,600	3,115	253,540
Santa Cruz . .	1,500	—	1,923	1,100	100	4,823
Yavapai . . .	5,600	—	14	3,280	150	10,944
Yuma	38,000	18,990	30,320	28,300	38,000	176,210

(*) Includes crops and pasture; acreage double cropped is counted once only and not all crops are shown. Source: University of Arizona "Arizona Agriculture, 1964."

COMPARATIVE YIELDS PER ACRE — 1963

Crop	Arizona	U. S. Average
Alfalfa seed, lbs.	220.00	165.00
Barley, bu.	67.00	34.70
Cotton, lbs.	1,048.00	524.00
Hay, tons	4.61	1.75
Oats, bu.	50.00	45.10
Potatoes, cwt.	255.00	201.80
Sorghums, bu.	67.00	43.30
Wheat, bu.	44.00	26.10

"About Arizona..."

Cost of Living

The answer depends on two decisions of your own: *where* you plan to live in the state and whether you plan to live on about the same scale as you did where you came from. For your over-all costs are about the same as in all progressive areas of the country, except for considerable savings in the major categories of housing and clothing — if you settle in the Central-Southern region of Arizona.

HOUSING in the "desert" area costs a great deal less than in cold-winter climates, either in Arizona or Northern U. S. (savings of from 25% to 35%), as outlined later on.

RENTALS differ very little from other areas, as far as monthly costs. But many apartments are grouped around central patios and pools, so you'll live *differently* — outdoors more of the year. A pleasant older house with two bedrooms and a single bath will run from \$85 to \$100 per month. New homes with multiple baths and bedrooms are higher.

FOOD costs roughly the same as east and west coasts, with some savings.

CLOTHING purchases are comparable in per-item costs, but due to the general lack of formality throughout the state you will effect a considerable savings. In the heavy-population (Central-Southern) area, there is no need for overcoats, galoshes, rubbers, scarves, gloves and assorted winter bundling. A majority of our population wear sports shirts without ties, for example. And even in our banks we discard suitcoats for the long summers.

MEDICAL-DENTAL fees approximate midwestern rates, but are lower than eastern-western seaboard.

UTILITIES. Telephones in Phoenix run from \$5.50 to \$6 per month for 4-party lines, \$8 to \$9.25 for private lines. Rates in other parts of Arizona are lower.

Your monthly gas and electric bill combined will average \$15.00, according to Arizona Public Service who serve 10 of the state's 14 counties. This figure, since it is an average, includes 10-county winter heating and summer cooling.

Incidentally, heating costs in the Central-Southern area will be much lower than cold-climate areas. However, if you consider summer refrigeration a necessity, as many moderns do, your annual fuel savings will be partly offset by this cost. The majority of homes cooled in summer are still evaporative-cooled, which is relatively inexpensive. But refrigeration, once considered a luxury, has now become so popular as to be in the same class as a "two-car family."

Big-ticket items — autos, stoves, refrigerators, etc. — will average slightly more in costs due to shipping charges.

6



Cost of Housing

HOME PURCHASES. The Central-Southern area will delight and astound purchasers from severe-winter climates. No basements, no violently-heaving frosts, no zero-and-below blizzards, plus the overwhelming preference for one-level "ranch-style" design, all present a real economy.

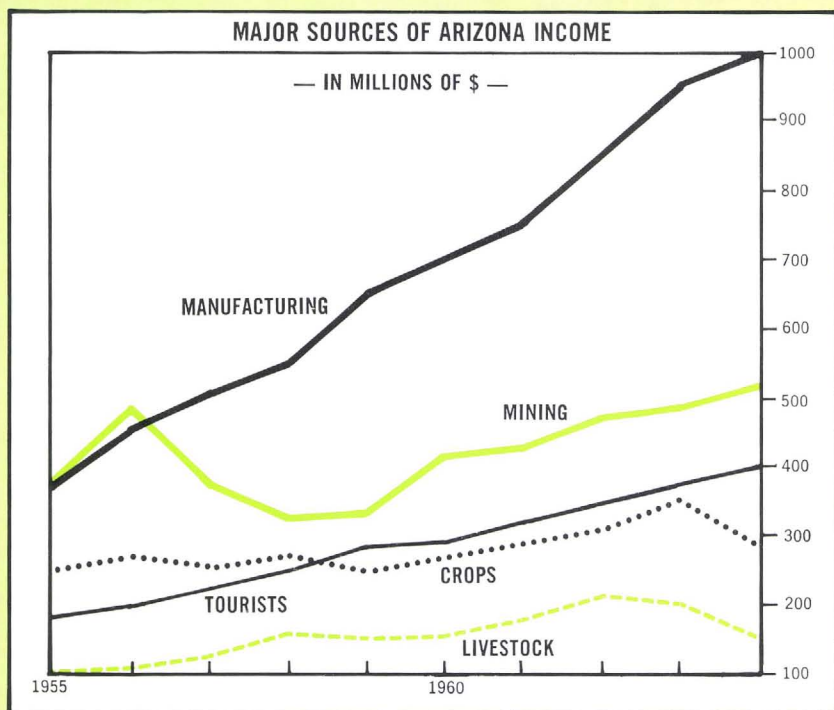
ARIZONA RETAIL SALES BY COUNTIES

County	(Calendar Year Totals)		
	1959	1960	1961
Apache	\$ 10,921,000	\$ 11,496,000	\$ 12,135,000
Cochise	57,358,000	61,883,000	65,658,000
Coconino	56,469,000	61,980,000	62,349,000
Gila	27,976,000	28,930,000	30,799,000
Graham	16,999,000	16,860,000	17,772,000
Greenlee	9,769,000	10,581,000	11,238,000
Maricopa	1,000,840,000	1,084,659,000	1,125,384,000
Mohave	13,899,000	15,205,000	16,820,000
Navajo	32,096,000	32,026,000	35,704,000
Pima	343,761,000	368,571,000	387,313,000
Pinal	55,203,000	63,989,000	65,750,000
Santa Cruz	21,609,000	21,270,000	22,301,000
Yavapai	36,571,000	37,539,000	38,034,000
Yuma	68,728,000	69,734,000	74,775,000
TOTAL	\$1,752,199,000	\$1,884,723,000	\$1,966,032,000

County	1962	1963	1964
Apache	\$ 13,001,000	\$ 13,279,000	\$ 13,041,000
Cochise	66,093,000	67,830,000	70,518,000
Coconino	67,410,000	71,720,000	75,932,000
Gila	32,071,000	34,025,000	34,988,000
Graham	19,452,000	19,572,000	20,140,000
Greenlee	12,061,000	11,639,000	12,401,000
Maricopa	1,215,150,000	1,286,566,000	1,386,968,000
Mohave	19,128,000	21,874,000	26,734,000
Navajo	40,008,000	41,118,000	42,289,000
Pima	421,105,000	427,953,000	434,970,000
Pinal	72,230,000	73,039,000	73,471,000
Santa Cruz	23,336,000	23,849,000	26,086,000
Yavapai	39,832,000	40,383,000	43,328,000
Yuma	79,101,000	86,690,000	94,466,000
TOTAL	\$2,119,978,000	\$2,219,537,000	\$2,355,332,000

MAJOR SOURCES OF ARIZONA INCOME BY YEARS

Year	Crops	Livestock	Manufacturing	Mining	Tourists
1955	\$242,842,000	\$100,455,000	\$ 365,000,000	\$378,277,000	\$180,000,000
1956	264,688,000	108,739,000	450,000,000	484,959,000	200,000,000
1957	252,701,000	121,880,000	510,000,000	372,641,000	225,000,000
1958	276,421,000	163,969,000	550,000,000	314,520,000	250,000,000
1959	253,708,000	160,474,000	650,000,000	326,861,000	280,000,000
1960	277,834,000	161,736,000	700,000,000	415,512,000	290,000,000
1961	286,767,000	176,874,000	750,000,000	425,995,000	320,000,000
1962	304,760,000	204,903,000	850,000,000	474,131,000	350,000,000
1963	348,666,000	200,735,000	950,000,000	481,115,000	375,000,000
1964	289,593,000	195,285,000	1,000,000,000	521,983,000	400,000,000



A Phoenix housing study made by the bank accounted for just 22.7¢ per cost-of-living dollar; Tucson, 21.3¢; national average, 32¢.

Most homes in these areas are erected on concrete slabs which incorporate the plumbing lines. Storm windows are unknown here. Roofs are made to withstand constant sun — and little rain. Land, in most of the state, is available at reasonable costs, with the exception of “prestige” locations (which can be very high, indeed).

Intense competition by skillful, aggressive mass-builders has produced savings in costs of labor and material. Lumber, block, cement, sand, gravel and brick are available in the state in abundant supply.

Money for financing, in spite of the terrific demand, has always been made available by this bank and other financial institutions, by life insurance and other investment firms.

Since we are a relatively “new” area, we have not had the misfortune of accumulating outdated building codes which restrict the use of new and improved materials and methods — many of which reflect construction savings.

Northern Arizona regions, where winters are cold, have comparable building costs to northern U.S. areas.

Taxes

No matter where you live, taxes are always with us — in the U.S. or Timbuctu. We all “pay the freight” for a burgeoning population, for the schools, roads, necessary governmental services — and our share of national defense needs.

Arizona ranks in the median level of tax loads. Back in 1950 our state made special adjustments to attract



industry — which is the great job-provider. Following is a brief summary of state and local taxes that is fairly typical throughout the state:

TYPE OF TAX	LEVELS OF FAMILY INCOME		
	\$5,000	\$10,000	\$20,000
1. Sales Tax	\$ 82.50	\$150.00	\$ 240.00
2. Gasoline Tax	30.00	40.00	40.00
3. Cigarette Tax	10.00	10.00	10.00
4. Personal Property Tax	9.22	61.30	235.00
5. Property Tax on Home*	260.40	416.64	624.96
6. Automobile Tax & Fees	15.13	58.73	146.33
Total Taxes	\$407.25	\$736.67	\$1,296.29

Arizona State Income tax is figured on amount left after Federal Income tax, standard/or other deductions and personal exemptions have been subtracted.

Then: First, \$2000—1%
 Second, \$2000—1½%
 Third, \$2000—2%
 Fourth, \$2000—2½%
 Fifth, \$2000—3%
etc. up to maximum of 4½%

TYPICAL PROPERTY TAXES ON HOMES*

Income	Market Price	Assessed Value	Average Tax Rate %	Property Tax
\$ 5,000	\$10,000	\$2,800	9.30	\$260.40
10,000	16,000	4,480	9.30	416.64
20,000	24,000	6,720	9.30	624.96

*Property Tax rates will vary from area to area and year to year.

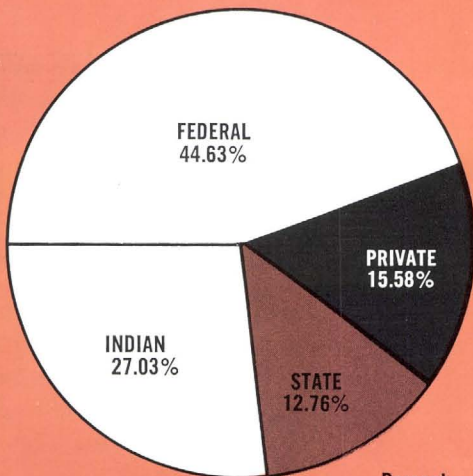
POPULATION OF INCORPORATED CITIES IN ARIZONA

City	1963 Estimate	City	1963 Estimate
Avondale	6,500	Mammoth	1,900
Benson	2,800	Mesa	38,000
Bisbee	10,200	Miami	3,200
Buckeye	2,400	Nogales	8,000
Casa Grande	8,600	Paradise Valley	8,400
Chandler	11,000	Parker	1,800
Clarkdale	1,100	Patagonia	550
Clifton	4,200	Peoria	3,500
Coolidge	5,000	Phoenix	500,000
Cottonwood	2,500	Pima	800
Douglas	12,300	Prescott	13,600
Duncan	900	Safford	5,100
Eagar	900	St. Johns	1,400
El Mirage	2,800	Scottsdale	40,000
Eloy	5,000	Show Low	1,800
Flagstaff	22,000	Sierra Vista	4,000
Florence	2,200	Snowflake	1,200
Fredonia	650	Somerton	1,700
Gila Bend	2,200	South Tucson	7,100
Gilbert	2,100	Springerville	800
Glendale	28,000	Surprise	1,700
Globe	6,500	Tempe	32,000
Goodyear	2,100	Thatcher	1,600
Hayden	1,800	Tolleson	4,100
Holbrook	3,800	Tombstone	1,300
Huachuca	1,500	Tucson	233,000
Jerome	350	Wickenburg	2,600
Kearny	1,200	Willcox	2,800
Kingman	6,000	Williams	3,600
		Winkelman	1,200
		Winslow	9,200
		Youngtown	1,800
		Yuma	28,000

POPULATION OF UNINCORPORATED CITIES

City	1963 Estimate	City	1963 Estimate
Ajo	7,100	Page	3,000
Apache Junction	3,000	Payson	1,100
Bagdad	1,500	San Manuel	4,100
Camp Verde	1,200	Sedona	3,100
Grand Canyon	1,300	Sun City	7,000
Morenci	1,950	Superior	4,900

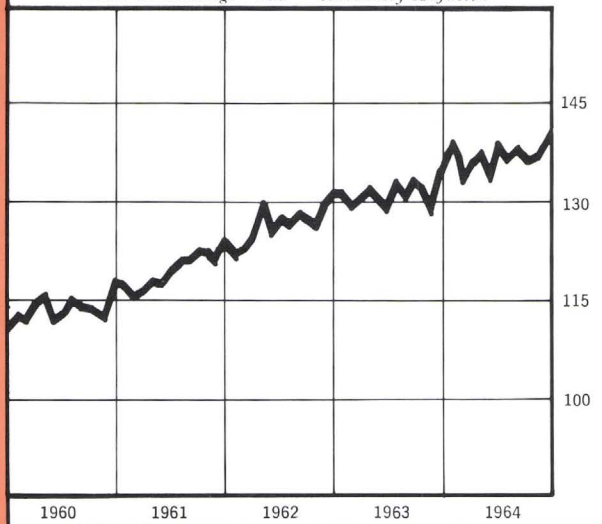
ARIZONA LAND OWNERSHIP



	Area-Acres	Percent of Total
Federally controlled, owned or managed lands	52,089,583	71.66%
Privately owned lands	11,324,311	15.58%
State lands	9,274,106	12.76%
GRAND TOTAL	72,688,000	100.00%

VALLEY BANK INDEX OF ARIZONA BUSINESS

1957-59 Average = 100 Seasonally Adjusted



Employment

Jobs are *not* plentiful in Arizona simply because people are moving here at a rate unprecedented in history. They come (perhaps as you did) because of family-health reasons, or because of our climate and scenery and open spaces or, conversely, just to escape static areas . . . to avoid another long, gray, tiresome and cold winter and the long hours of commuting from home to job.

Our economy *does* expand with the population increase (see the startling numerical growth in the schedules pages 11-12), but there is always a lag. If the influx of new arrivals ever slows down, the economy would quickly "take up the slack."

During the next decade, according to the State Employment Service, manufacturing and trade will show the largest growth—both in dollar volume and employment. Manufacturing seems destined to be related to the electronics industry in Arizona (which delights residents as it is a "clean" industry with a high-calibre of employee). Trade employment will expand as it always has, through sheer pressure of a 63% increase in population.

There is a demand for teachers, secretaries, clerical help and electronic engineers.

Candor impels us to remind you that neither Phoenix, Tucson nor all of Arizona is a match for Chicago or Los Angeles. The variety and depth of employment is restricted. As a result, many people locating here find they have to change their "line" or profession to earn a livelihood.

Employers are hesitant, somewhat, to hire during the "winter" season in the Central-Southern area, for experience has shown them that many applicants are

“snowbirds” who work for the winter, then quit to return in spring to their native states.

Experienced personnel people suggest:

1. *Don't* try to “connect” entirely by mail, unless you have a high-demand skill, because we have a lot of applicants right here in person.
2. *Don't* “tear loose” and move out here with your family with only enough “eating money” for a week or two. Matching available jobs to applicants — in an “employer’s market” — is a slow process.
3. *Do* arrange to come out on a short trip for a personal “look see” of the area where you want to live, and bring with you a definite desire for the line of



work you want and prefer. Then all of us can point you toward any firms who provide the kind of jobs you are seeking. And have at your finger tips a concise summary of your education, experience, etc., and a few solid reasons why you would be an asset to the firm you want to join. (Too many folks, of all ages, say they “can do anything” and just want “a” job.)

4. Be prepared for a *long* job-hunting period. Some people step into openings (the right man at the right place at the right time), while others have difficulty making connections with a job they really want — and can satisfactorily fill.

5. Be *realistic* in your self-evaluation. While the area

zona residents only) are on a basis of one to a lifetime. Black bear are taken occasionally, but dogs are practically a necessity.

SMALL GAME: Cottontail rabbits are found everywhere. Jackrabbits are not considered game animals and may be taken any time in any number.

Two species each of doves and quail are found throughout the higher mountains. White-winged and mourning doves, Gambels and scaled quail are available. Some duck and goose shooting are found in scattered shooting areas, but not on any large scale.

In addition, muskrats, raccoons, coati-mundi, opossums, otter, mink, badgers and ringtail cats are taken — under special, furbearing regulations.

Predators — foxes, skunks, mountain lions, coyotes, wolves, jaguars, weasels, bobcats, ocelots and porcupine — may be taken at any time, with a valid hunting license.

FISHING: There is no closed season on any fish species, day or night. Bag limits are on only three general species: black bass, channel catfish and trout.

Warm water species: largemouth and smallmouth bass; bluegills, crappies, sunfish, channel catfish, yellow bass (“stripies”) and some bullheads are found.

Trout are hatchery-raised (chiefly Rainbows) and except for the Colorado River, are mainly in the timbered parts of the state.

The various lakes and river areas are outlined in the Game and Fish Department's folders. A state map, provided by the Highways Department, is a necessity to a newcomer to Arizona.

Hunting and Fishing

License fees are required for both residents and non-residents. For a detailed folder on these sports, write Arizona Game and Fish Department, 1688 W. Adams St., Phoenix.

FIFTY-SIX PERCENT of Arizona's land is "public" in that it is owned by the federal or state governments — hence generally open so that finding a place to hunt, fish or camp is no problem.

Indeed, another 27% is in Indian Reservations, and much of this area is open to hunters and fishermen — by special permission from the tribal governments. The more popular recreation areas have well-developed and maintained camp grounds.

General Topography

Arizona is roughly divided into three regions. The lower third is semi-desert or desert-grassland of low elevations (to about 3,000 ft.). North-central and eastern areas are considerably timbered (6000-9000 ft.) in a belt from the Grand Canyon to New Mexico, between Alpine and Clifton.

BIG GAME: Deer, javelina, elk, turkey, antelope, bighorn sheep, buffalo and occasionally bears. Deer is the most popular, being found in almost any locale.

Elk, nearly extinct, requires a limited, special permit. Wild turkey is found in most timbered country. Antelope inhabits the high mountain prairies.

Bighorn sheep (limited take-experimental) were nearly extinct but seem to be coming back, and buffalo (Ari-

might be smaller than your home state, Arizona is the haven of a lot of smart, shrewd, capable Easterners who prefer to live here. In other words, competition is rugged for we have the best, most aggressive and competent people available — who came with determination to find a slot of *any* sort in the sunshine.

We do not have (at the moment) any big-employer steel mills or automobile assemblers . . . in other words, a lesser demand for huge numbers of workers and a smaller variety of trades.

6. If you are courageous, competent, willing, and determined, you *can* locate employment here, thousands have, although there is always the possibility of having to "switch hats" — change your type of work.



NON-AGRICULTURAL EMPLOYMENT TRENDS IN ARIZONA

As of June	Manufacturing	Mining	Construction	Transportation and Utilities	Wholesale and Retail Trade
1955	33,400	14,300	18,900	22,000	53,400
1956	38,200	16,000	20,900	23,000	59,100
1957	42,400	17,000	22,400	22,700	64,700
1958	41,700	15,900	26,600	22,900	67,500
1959	47,600	16,100	26,600	24,200	73,700
1960	50,600	15,800	32,200	25,300	79,200
1961	51,200	15,600	33,200	24,400	81,000
1962	56,500	15,700	32,000	25,100	85,200
1963	59,000	15,100	28,500	25,700	89,300
1964	59,300	15,400	28,900	25,200	91,900

NON-AGRICULTURAL EMPLOYMENT TRENDS IN ARIZONA (cont.)

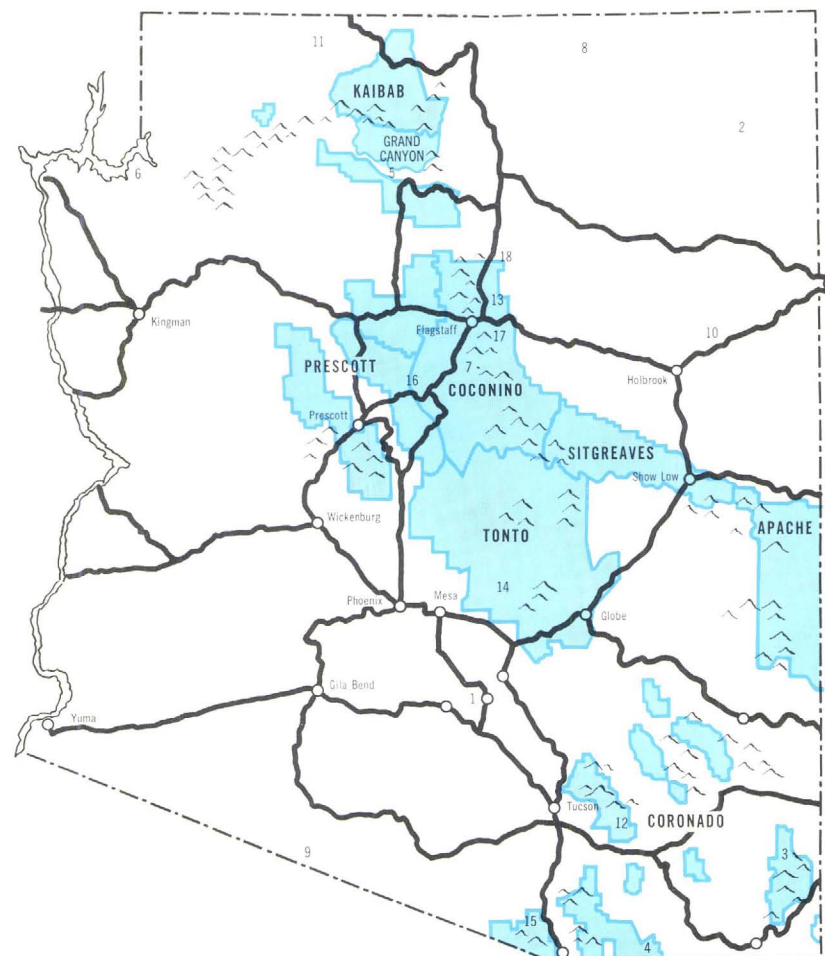
As of June	Fin., Ins., & Real Estate	Services and Miscellaneous	Federal Government	State and Local Government	State Total
1955	8,900	30,000	16,600	28,000	225,500
1956	10,400	32,400	19,200	31,500	250,700
1957	11,400	35,900	20,000	35,000	271,500
1958	12,800	38,100	20,300	38,100	283,900
1959	14,600	43,100	21,000	40,900	307,800
1960	16,500	47,800	21,100	44,400	332,900
1961	17,300	51,100	22,200	48,200	344,200
1962	18,700	55,500	23,100	52,300	364,100
1963	19,900	58,400	24,300	54,900	375,100
1964	21,000	61,500	23,900	59,100	386,200



Schools and Education

We are delighted to have you ask about our schools, for when the subject gets around to education, we *know* you are thinking about becoming an Arizonan.

To assure you that this part of the country does not lag behind any other state, let us point out two important facts: 1. In order to teach in our high schools, a teacher *must* have a master's degree. 2. Teachers are paid, here as elsewhere, on the basis of their education, experience and the amount of post-graduate work they accomplish. And Arizona teachers are approximately the 5th highest paid in the nation!



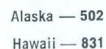
NATIONAL FORESTS OF ARIZONA

National Forest	Area in Acres	National Forest	Area in Acres
Apache	1,190,068	Prescott	1,247,572
Coconino	1,800,738	Sitgreaves	772,963
Coronado	1,721,368	Tonto	2,898,118
Kaibab	1,720,285	TOTAL	11,351,112

NATIONAL PARKS AND MONUMENTS IN ARIZONA

1 Casa Grande	7 Montezuma Castle	13 Sunset Crater
2 Canyon de Chelly	8 Navajo Nat. Monument	14 Tonto Nat. Monument
3 Chiricahua	9 Organ Pipe Cactus	15 Tumacacori
4 Coronado Nat. Memorial	10 Petrified Forest	16 Tuzigoot
5 Grand Canyon	11 Pipe Springs Nat. Monument	17 Walnut Canyon
6 Lake Mead	12 Saguaro	18 Wupatki

(State of Birth of Arizona Residents — 1960 Census)



Tucson's University of Arizona, renowned for years for its law and mining colleges, has recently expanded its physics and engineering programs. The sciences and arts are thoroughly covered, and the move of its astronomical observatory to nearby Kitt Peak will accentuate the University's entry into astrophysics. Coeducational, fully accredited, it has a large campus and modern buildings within the city limits of Tucson. The 1964 fall semester enrollment totalled 21,310, and faculty-staff numbered 2,115.

Phoenix College, in the capital city, is a junior college, fully accredited by the North Central Association. Coeducational, but no dormitories.

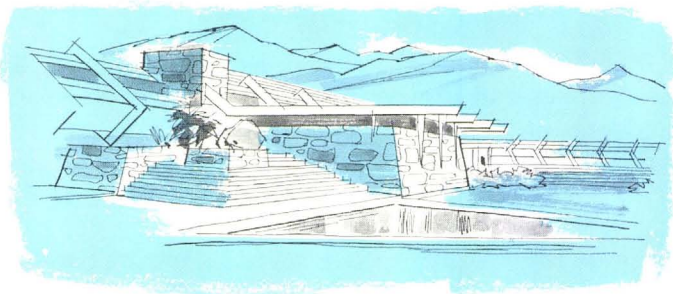
There are additional junior colleges at Thatcher (Eastern Arizona College), Yuma (Arizona Western) and Douglas (Cochise College).

Arizona State College at Flagstaff serves the Northern part of the state. It is coeducational, fully accredited, known primarily as a teachers' college, and for its school of forestry. The school makes use of the nearby, world-famous Lowell Observatory.

Funds are being raised for a new liberal arts college at Prescott. It is hoped that this institution will be ready for students before 1967.

Northwest of Phoenix, and due north of Glendale, is the American Institute for Foreign Trade, unique in preparing students for careers in international banking, marketing, sales, government, etc. The students are post-graduates taking concentrated courses in foreign languages and specific nation studies of commerce and customs. Coeducational, married students welcome . . . also "crash" courses for business executives.

Grand Canyon College in Phoenix is a coeducational school sponsored by the Southern Baptist Church. Fully accredited, it offers A.B. and B.S. degrees.



Northeast of Phoenix is another world-famed school,

comers and natives take advantage of the deep-sea fishing ports, the festival atmosphere of fun and frolic, the sight-seeing, bull fights, modern night clubs and unusual eating places.

It is the easiest foreign country to get in and out of, with the possible exception of Canada.

For one-day stays, you simply walk or drive across the border at your convenience, from our two main ports-of-entry — Douglas and Nogales. Nogales, in fact, is the second busiest land "port" along the vast Mexican border. If you wish to travel beyond the city limits of Nogales, Sonora or Agua Prieta, you must obtain a Tourist Permit from the Mexican Consul. There is no charge for stays of 30 days or less, but for longer periods up to 180 days the permit cost is \$3 per person. For "South of the Border" trips, there is bull-fighting all year in Nogales; delightful, centuries-old, history-laden Mexican towns farther south, and vigorous modern cities well ahead of U. S. architecture in many respects.



Fishing off the Gulf compares with the world's most famous big-fish spas. There is a beautiful and fascinating trip on an all-paved highway to Hermosillo (175 miles); Guaymas (260 miles); Ciudad Obregon (340 miles); Mazatlan (750 miles); Guadalajara (1100 miles) and fabulous Mexico City (1500 miles).

This trip takes you by seaports, great agricultural districts, booming new cities and hundreds of intensely colorful historic and scenic spots. At the same time you will pass towns where the "way of life" has not changed for centuries. Fast air service to all parts of Mexico is, of course, available from Tucson and Nogales.

The Papagos have 2,800,000 acres of incomparable desert scenery in Southern Arizona, spreading along the Mexican border.

In East-Central Arizona the San Carlos Apaches have lands running the gamut from desert scenery to grass plateaus to high, pine-clad mountains.

Another high-country reserve is the historic Fort Apache. Here the White Mountain Apaches are developing a tremendous recreation-tourist program in the heart of the fabulous White Mountains.

One of the most interesting Indian areas in Arizona is the Hopi Reservation, which is entirely surrounded by the Navajo lands.

In Western Arizona, the Colorado River Reservation offers entirely different scenery, with fishing, boating and water sports as well as winter-resort facilities.

Still another unusual scenic area is the Hualapai (Wall-a-pie) Reservation in Northwestern Arizona.

There are basic rules for visitors which must be observed: Our Indian peoples are usually most hospitable, but insistent on common rules of courtesy and respect for their property rights and traditions.

You might be more sympathetic if you conceived of hordes of Indians descending on your home every summer, cameras in hand, dressed in outlandish costumes, and insistent upon snapping pictures of you and your family as you go about your daily lives.

When leaving main highways local inquiry is indicated as to road conditions.

Mexico

Hardly anyone ever settles in this state without soon learning that one of the many advantages is our adjacency to good-neighbor Mexico. Indeed, both new-

Taliesen West, a private coeducational architectural school founded by the late Frank Lloyd Wright. Students here come from all over the globe.

High schools and grammar schools, in general, have followed the mass populations. In older established areas, schools are adjacent, modern and complete, although you will find new schools continually under construction as they attempt to keep pace with the growth of the cities.

Some mining communities, with scattered populations, share a common high school — with a resultant transportation problem. In general, however, you will find ample schools serving practically any area of Arizona you may be interested in. Many of the grammar-and-high-schools in Phoenix and Tucson are models of modern school construction, comfort and attractive design.

As in any metropolitan area, there are all kinds of business and private schools.

Community Property Laws

Arizona is a Community Property State, which may be unfamiliar to you.

Property ownership is the most important category. In general, real or personal property acquired by either spouse during marriage is, in Arizona, the community property of both. However, there is no change in property status merely from moving into the state.

If the property was owned separately before moving to Arizona — or if property was owned by one spouse prior to marriage — the title and income from the property remains separate. However, if the status of the property is in doubt, Arizona courts favor treating it as community property.

The husband is the legal agent of community *personal* property during marriage. He may dispose of it on his signature alone. But the transfer of real property requires signatures of both husband and wife.

These laws have a very definite effect on wills, trusts and inheritance taxes, and should be discussed thoroughly and promptly with your attorney — and the Trust Department of an Arizona bank (preferably the Valley Bank!).

We might point out that a joint bank account with survivorship instructions is frequently desirable. Also, because we are a community property state, a couple may be covered by up to \$40,000 Federal Deposit Insurance by having four \$10,000 bank accounts; two joint and two single name.

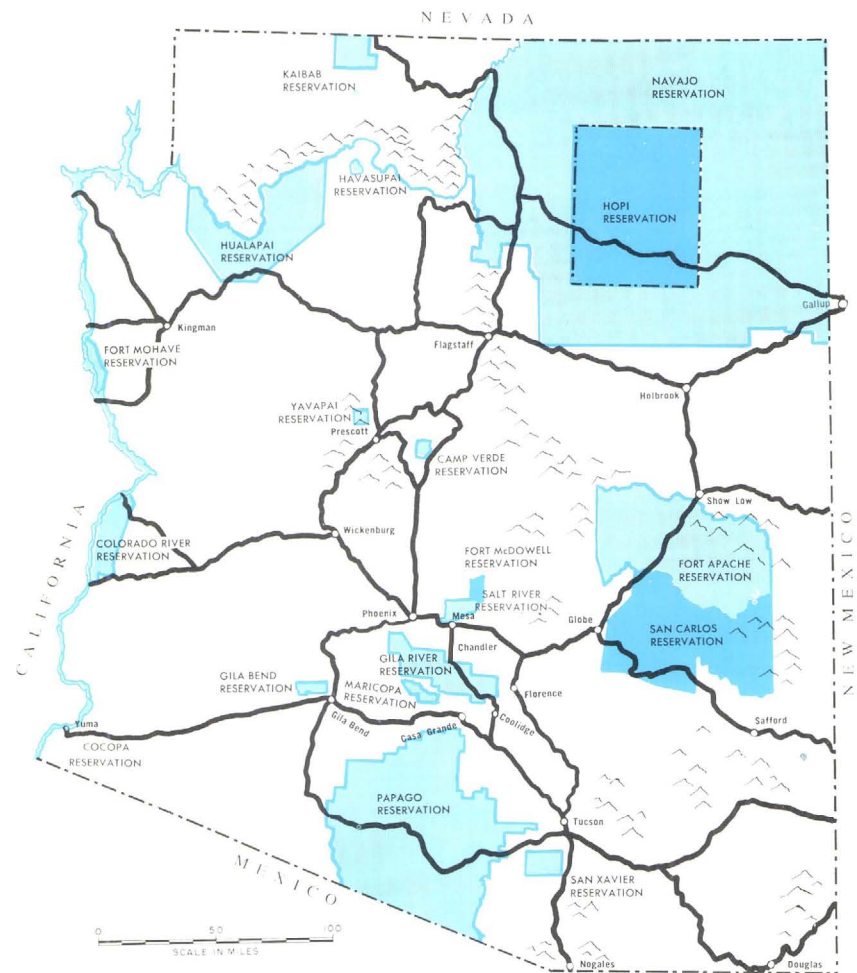


Land

Many people, especially in the postwar years, have made fortunes in real estate, here in Arizona. As the national attention turned Southwest, some of the land-owners sold to new investors, and these, in turn, sold to others who followed them. Indeed, land transactions continue to dominate the business news.

But the day has passed when a *blind* investment in just "Arizona land" can be counted upon to appreciate for an accrual. After all, thoughtful real estate experts and various investment combines have been studying the possibilities for over a decade.

This is *not* to imply that speculation or investment is at an end . . . actually, certain areas — high in price



Reservation	Tribe	Area in Acres	Reservation	Tribe	Area in Acres
Colorado River	Mohave	225,996	Salt River	Pima	46,591
Fort Mohave	Chemehuevi		Fort McDowell	Maricopa	
Cocopa	Mohave	23,669		Mohave	24,680
Fort Apache	Cocopa	528	Maricopa (AK Chin)	Apache	
Hopi	Apache	1,664,872		Papago	21,840
Kaibab	Hopi	2,472,216		Pima	
Navajo	Paiute	120,413	San Carlos	Apache	1,854,801
Papago	Navajo	8,968,828	Hualapai	Hualapai	991,680
San Xavier	Papago	2,773,596	Havasupai	Havasupai	3,058
Gila Bend	Papago	71,044	Camp Verde	Apache	576
Gila River	Papago	10,297	Yavapai	Yavapai	
	Pima	371,929		Yavapai	1,399
	Maricopa				

In recent years, a number of bona fide retirement communities have been built, with several more under construction or in design stage as we go to press.

These communities are laid out with the senior citizens distinctly in mind. No schools, no high-speed highways, no manufacturing or noise-producing businesses. Mostly areas of homes and lawns, centered around a community shopping center, with parks or recreation areas. Some have even incorporated community golf courses, fishing ponds and swimming pools.

While most of these communities are in the "moderate-income" bracket, they are extremely attractive and have no adjacent "run-down" areas nor, indeed, any "problem" areas nearby. They are so attractive to senior citizens, in fact, that in addition to appealing to the visitor from other states, many of our own citizens who have worked in Arizona all of their lives are moving, or planning to move, to these quiet, restful, relaxing towns for their retirement.

Indians

Arizona has more Indians, Tribes and Reservations than any other single state. There are 14 tribes on 19 reservations, adding up to 80,000 inhabitants. Many more Indians live off reservations.

In spite of television Westerns, the Indians are universally friendly, and a visitor who could get along with the people he met in travelling across the country will get along all right with our original natives.

Reservations include 19,650,000 acres — or 27% of the state's total land area. The Navajos alone have almost 9,000,000 acres. This tribe, incidentally, has undertaken a major recreation-tourist development program and you will be welcomed as a visitor.

as they seem to long-time residents — are still almost sure to go higher. For all predictions are that our population will almost double in the decade 1960-70.

The stories of acreage that went from 50c to \$5,000 are often true, but after hearing them, new arrivals are apt to get "land fever" and leap before investigating.

For example, there are still great areas of "dirt-cheap" land left in the state, but the reason they remain so inexpensive can be ascertained by a thoughtful visit to them. Some are inaccessible except by horseback; some have no access-road possibilities; some have no water; some are so desolate and rocky they might, for all practical purposes, be on the Moon. Such areas are almost worthless as investments, impractical for retirement.



Before investing in "Arizona land" there are some practical steps you should take, as suggested by experienced real estate people:

1. Have a look at the property being offered and find out if it is staked so you know exactly what acreage you are buying.
2. See if there is some guaranteed access, or a way to gain access in later years.
3. Check on availability of water and utilities and satisfy yourself they *can* be obtained.
4. Try to find out what is planned for the land surrounding the piece you are interested in.
5. Decide to what use you could put the property, and evaluate the whole area in those terms.
6. Check price quotes on adjoining land to determine that the asking price is equitable.

7. Make certain that the terms of payment coincide with what you can handle . . . that if the land does not resell as quickly as you anticipate (if you are purchasing for investment), you can “live with” the monthly or annual cost.

In other words, *investigate before you invest.*

Traffic Laws and Registration

Arizona traffic regulations are probably not much different than anywhere else. The most notable differences to Easterners are: right turns permitted on red light, unless otherwise noted, after coming to full stop; left turns against oncoming traffic are made at your own risk . . . the straight-through traffic has the right of way; pedestrians *always* have the right of way in walk-crossings; the 15-mile-per-hour school zones, always clearly marked, mean what they say. Arizona is determined to protect its children, and there is no surer way to a husky fine (or imprisonment) than to “sail through” a 15-mile school zone! Also *don’t* pass a school bus loading or unloading children . . . when the bus stops, *all* traffic stops in either direction!

Speed limits: Generally 60 MPH daytime, 50 night time, on state highways . . . or as posted. In residential and business districts: 25 MPH (or as posted), and the aforementioned 15-MPH school zones.

Legal driving age is 16; an instruction permit can be obtained at 15 years 7 months. Arizona Drivers’ Licenses are issued for 3 years, from your last birthdate.

You are required to take out a visitors’ registration permit within 10 days of arrival in Arizona. No fee, just have your home state registration inspected at any Highway Patrol Office, Drivers’ License Office or Border Check Station.

As soon as you indicate making this state your place of residence, you must obtain an Arizona Drivers’ License, which requires a written examination and road test. There is a nominal \$2.50 charge for this license.

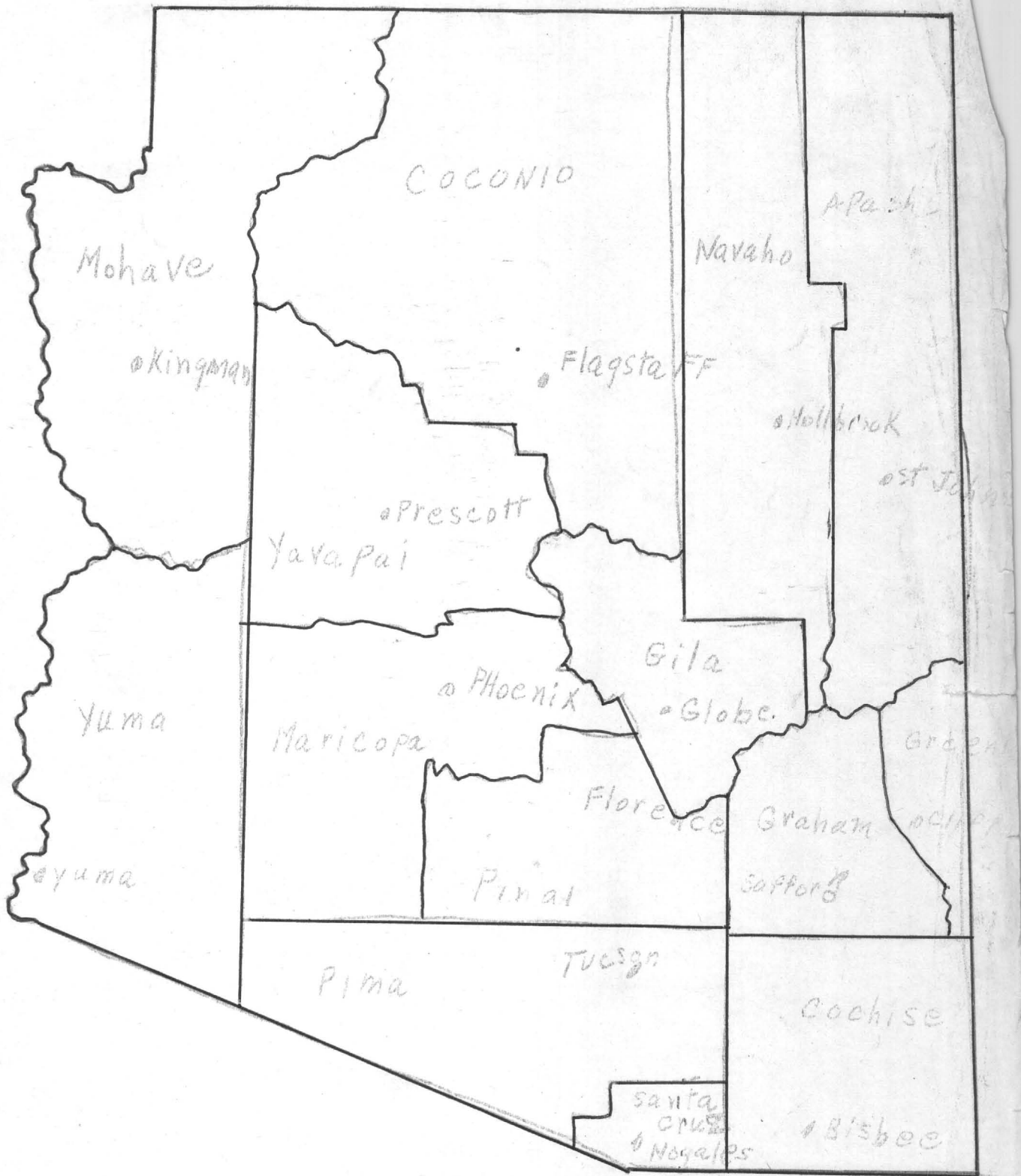
The driver of any vehicle involved in an accident, in which there is a death, or bodily injury, or property damage in excess of \$100, must file a written report to the proper authorities within 5 days. Liability insurance is almost a “must,” for under our Motor Vehicle Safety Responsibility Act, drivers’ licenses are automatically suspended — following an accident — unless “deposit security in an amount sufficient in the judgment of the Superintendent to satisfy any judgments for damages” is forthcoming.



Retirement

Because Arizona has been such a lively, aggressively-expanding area, it was surprising to the natives to learn that people seeking retirement kept coming out here in ever-increasing numbers.

There is, actually, nothing strange about this whatsoever! The climate, in the South-Central area, is ideal for the men and women who have longed for a place to “loaf in the sun.” Not only have the main areas of Phoenix and Tucson benefited from couples who buy homes in which to settle down, but other towns, farther from the “bigger” cities, are finding each year they have many new retirement citizens.



Arizona

Much of Arizona was under water millions of years ago and great beds of sandstone were formed. Later dinosaurs lived there. Many plants decayed and turned to stone. Trees were buried and turned to stone. Rivers carved canyons. Many volcanoes threw out ash and lava. Millions of years later camels, bison and saber-toothed tigers lived in what is now Arizona. Slowly the country dried out until it is as it is today.

Arizona today is the 6th largest among the nations 50 states. It is bounded on the west by California and Nevada, the south by old Mexico, east by New Mexico and on the North by Utah. It is here you'll find the famous four-corners rich in oil, mineral and scenic wealth and the famed Navajo Indian nation. Arizona's 73,000,000 acres holds the most varied scenic attractions in the world.

Man has lived in Arizona 20,000 years. Indians came to all parts of America from Asia across the Bering Sea. The simple stone tools we have found in southeastern Arizona indicate that a primitive agricultural community once existed. The northeastern part of the state did not have much agriculture however they learned to make stone houses of three and four stories. In time these Indians became the Hopis and Pueblo Indians of New Mexico.

Some of the early Indians went to the desert region and lived along the Gila and Salt Rivers. We call them the Hohokam. The Hohokam built miles of big irrigation canals & grew corn, cotton squash and beans. They probably became the Pimas and Papagos of today.

Early civilization was destroyed by a 23 - year drought. Following the drought in 1539 Fray Marcos de Niza visited Arizona. He was the first white man to visit Arizona. He and Estevan came to find the seven cities of gold and he thought he saw one. Coronado & his men spent 2 years trying to find gold. They went back to Mexico ragged and poor. One of Coronado's men discovered the Grand Canyon. The weather was extremely hot and when the Spaniards did not find gold they returned to Mexico.

Father Kino was the first missionary to work with the Indians in Santa Cruz Valley. He established many missions and worked 25 years to bring Christianity to Arizona. Father Kino died in 1711 and the area was neglected until a silver strike brought mining operation to this area. There was still little colonization and when Mexican Independence from Spain was declared in 1821, Arizona was under the Spanish flag.

Southern Arizona was purchased by the U. S. from Mexico in 1853 and it became a territory in 1863. Hostile Indians and war between the states delayed the states progress, but the period of 1880 - 1910 witnessed the growth of mining, sheep and cattle industries.

Arizona became the unions 48th state in 1912 and until the statehood was granted in 1958 it remained the "baby state". It is now known as the "Grand Canyon State" and is the fastest growing state in the nation.

The population is estimated more than 1,200,000 and manufacturing has become the states principal source of income, followed by mining, agriculture and livestock. Millions of tourists from other states visit this vacation state of the nation. The beautiful Grand Canyon to the north and the sun swept desert is very inviting and many of the tourists return to stay permanently.

Scientists of space, electronics and atomic age find Arizona a haven for research.

Arizona is rich because of the culture of the people who live here. Indians and Mexicans have given color and fun to our way of life.

*Sahara
Desert*

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Open Desert

Far across the Atlantic Ocean, on the continent of Africa, is the largest desert in the world. It is called the Sahara. The entire United States could be put into the Sahara and there would be room left over.

In some places the Sahara looks like the sand dunes, we find sand dunes near Yuma, Arizona. Sand dunes are piles of sand that cover miles of the Sahara. Part of this desert is a plain covered with rocks and pebbles of different sizes. In many places the desert is similar to the deserts of Arizona. Among the hills are valleys with dry river beds. Everywhere the soil is dry and sandy.

Deserts make their own sand. During the day there are no clouds in the desert to keep the sun from heating the rocks. They get very hot. At night the desert gets cold. The rocks loose their heat quickly.

The sudden changes of temperatures cause the rocks to break. After many years they crumble to sand.

In some parts of the Sahara no rain has fallen for several years. No plants grow in this area. In other places, where there is a little rain, the scattered plants are mostly tufts of grass and hard, tough shrubs. These shrubs often have prickly branches and stems. Their roots are long and go deep into the ground in search of water. These plants are food for sheep, goats and camels.

There are many animals that live in the desert. There are antelopes, poisonous snakes, tiny lizards and scorpions.

① Reference
TRAINING SCHOOL LIBRARY
Arizona State College
Tempe, Arizona

HISTORY OF ARIZONA

HISTORY

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Indians have lived in Arizona for at least 10,000 years. They came over from Asia by way of the Bering Sea and drifted South until they finally lived in all parts of North and South America. When they settled down in a place they made their shelters and homes from the things at hand. In the mountains they used caves or logs or stones or combinations of these. In the deserts brush and adobe mud was used. In time, the houses improved. The Hopis made pueblos in the same general style as modern apartment houses, except that entrance to the upper rooms was by ladders from roof to roof. Oraibi has been lived in continuously since about 1300. This makes it the oldest town in America in which people have lived continuously. The houses of the Indians in other tribes had one room of brush and mud or of logs.

The Indians in the valleys of the Salt and Gila Rivers learned how to dig miles of ditches and irrigate their crops.

The first white man to come to Arizona was Fray Marcos. In 1539 he and his slave Estevan were looking for the seven cities of gold. He thought he saw one and hurried back to Mexico to tell the good news. Coronado and his men came the next year and were much disappointed to find no gold. Arizona was left to the Indians until 1690. That year Father Kino came to convert the Indians along the Santa Cruz River valley. They welcomed the kindly priest with his gifts of seeds and domestic animals. Father Kino laid the first foundations of the mission of San Xavier del Bac in 1700. After his death in 1711, Apaches and other troubles caused the mission, gardens and fields to fall into decay for years. In 1768 Father Garces came into what is now southern Arizona and rebuilt the mission of San Xavier, which is still used by the Papagos for

worship.

The Apaches and Navajos came into the Southwest about the fourteenth century. They were nomadic and did not get on well with the more sedentary tribes who were already living in the region. After the Mexican War and the Gadsden Purchase of 1853, the United States sent soldiers to maintain order. The Navajos learned to live peacefully and look after the sheep and government gave them. The Apaches had a harder time learning to be farmers and herdsmen, but eventually they did and now have prize herds of cattle. The Pimas and Papagos have been peaceful farmers ever since the white men first came.

During World War II many Indians enlisted in the armed services and discovered the importance of an education. As a consequence more young people are going to school and college. They are being encouraged to live off their reservations.

The first English-speaking white men were trappers who came for the thousands of beaver and other fur bearing animals to be found along the mountain streams. James Pattie who was here with his father and a party of other men in 1826, left the first written record. The mountain men loved the West and went on to California.

At the time of the Mexican War Kearney and his men marched down the Gila River on their way to California. They were going to help the Americans who were already living in California capture the land from the Mexicans. Cooke and the Mormon Battalion crossed what is now southern Arizona and made the first wagon road from the Mississippi and the Pacific. This group went further south than Kearney and his men.

In 1848 Gold was discovered in California and thousands followed the road made by the Mormon Battalion to seek their fortunes in the gold. If the friendly Pima Indians had not helped all these

people they never would have been able to cross the desert. Later, some of these people who had not been successful in California returned to Arizona to see what they could find.

Colonel Charles Poston and Herman Ehrenberg were among the first to prospect in the hills along the Santa Cruz valley. They bought thousands of acres and many mines. They had a delightful place to live in Tubac, until 1861. Then the War Between the States broke out and the United States soldiers, who had been keeping the Apaches quiet, were called east. When the Apaches saw the soldiers leave they thought they (the Indians) had driven out the hated "white eyes" as they called them. The Apaches then set out to kill all the traders, miners and farmers that were left. Arizona was a fearful place in those days, until Colonel Carleton came. (Later he was made a general.) He was sent to Arizona to drive out the Southerners who threatened to capture rich mines in the state and in California. Southerners had taken over Tucson and proclaimed Arizona a territory.

Lieutenant Barrett was with the California Volunteers which was a Northern army. He and a dozen men were sent ahead to capture a small group of Southern soldiers. There was a short battle near Picacho. Barrett and two of his men were killed. The Southerners had two men killed and three captured. That was the only battle of the Civil War fought in Arizona. The Southerners were discouraged and when the rest of the California Volunteers came, they left Tucson and went back to Texas. Arizona was now safely on the side of the North.

Arizona wanted to have law enforcement closer than New Mexico because of Indian troubles and the bad men that had come from California. General Carleton went after the Navajos and Apaches. After months of fighting he made them settle down on reservations. He also made the bad men behave themselves.

Several men had gone to Washington to try to get Congress

1863
to pass a law saying that Arizona could be a territory. But Congress had been too busy to pay any attention to a place so far away. Finally Mr. Charles Poston went and was successful. President signed the bill making it a law and appointed the governor and other officers in 1863. In August the men started out for the new territory they were to govern. The capital was to be near Fort Whipple for two reasons. A great number of gold mines had been discovered in the mountains near there and the people of Tucson were thought to sympathize with the South, Governor Goodwin and the other officers were all Northern men. The capital was soon moved to Prescott, a new little town a few miles away. It stayed there until 1867. Then it moved to Tucson. In 1877 the capital was moved back to Prescott again, where it stayed for twelve years. Phoenix, by that time was growing and was in the center of the state, so the capital was moved there in 1889. It has stayed there ever since.

One of the big steps in the history of Arizona was when the warlike Apaches were made to keep the peace. Then it was safe for prospectors to look for mines in the hills. More people came to settle in the Salt River Valley, and other communities in the state.

Prospectors in the early days were not interested in copper so they paid little attention to the signs of copper ore. Gold and silver were what everybody wanted. Henry Wickenburg discovered the richest gold mine near the present town of Wickenburg. He named it the Vulture. The Silver King in the mountains east of Phoenix was rich in silver ore. The silver mines near Tombstone were also very rich, but underground water flooded the tunnels and forced them to close.

When industry and electricity created a great need for copper, rich mines were opened in Ajo, Morenci, Superior, Globe

Bisbee and Jerome. The use of machinery for mining and the discovery of an inexpensive method for processing low grade ores made it profitable to mine these ores. World War II created a huge demand for copper so new claims of low grade ore were opened. Mining is still big business in Arizona.

Another turning point in the growth of Arizona was when big dams on the rivers ensured a permanent water supply. That and wells for irrigation attracted people who put into cultivation thousands of acres of fertile desert land. Agriculture brings in millions of dollars annually. The combination of fertile soil, plenty of water and a long growing season produce bumper crops of cotton, melons, winter vegetables, grain sorghums, barley and alfalfa.

In the Salt River Valley and around Tucson the hundreds of new houses, industrial plants, schools and shopping centers that sprang up took over farm land. Thousands of acres of new desert land were brought under cultivation so that in the end not much ^{if any} farm land was lost.

Cattle raising has been profitable for years. The animals live on ranges in the hills until it is time to fatten them for market, then they are taken to feed lots in the valleys to fatten. The first cattle ^{in Arizona} were long horns. Herefords replaced them. Today Herefords crossed with Brahmas from India (Braford's) and Angus crossed with Brahmas (Brangus) are doing very well.

Thousands of sheep are brought down from the mountains every fall to have their lambs in the valley.

The history of transportation in Arizona has been interesting. The early Spaniards and trappers used trails and pack animals. Journeys took weeks and months. Freight rates were very high. The first wagon road was made by members of the Mormon Battalion when they went to California. Many of the 'Forty-niners used the

same road. It was still a slow hard journey.

The ^{Railroads} Southern Pacific was built across southern Arizona 1879-1880. In 1881-1883 the Santa Fe tracks were laid across northern Arizona. Central Arizona still had to use freight wagons and stage lines. In 1887 a branch went from Maricopa to Phoenix, but it was not until 1895 that a line was brought down from the Santa Fe at Ash Fork through Prescott to Phoenix. Narrow gauge railroads ran for thirty years or more to the various mines.

The first paved roads were in Phoenix in 1911. In the '20's and '30's well paved highways with easy grades made their ways to the cities and towns of the state. When trucks and busses took freight and passengers throughout the state the small railroads gradually stopped running. Today highways are being improved rapidly and air fields being built so that air travel is also important in Arizona's transportation today.

World War II was a big turning point in the history of Arizona. There were eight big air bases and other centers of operation for the armed forces, where thousands of young men were trained. Many of them loved the country and after the war they returned with their families. Light industry also discovered Arizona was a very pleasant place to locate that had excellent transportation. The result has been that the population in southern Arizona has more than doubled since 1940. Business has been very good. Lots of building meant many jobs. New industries meant more jobs. People had money to spend and a delightful place to spend it.

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THE STATE OF ARIZONA

ORIGIN OF NAME

Arizona is derived from "Aleh-zon", so called by the Papago and Pima Indians - the two languages being practically the same, meaning "Little Spring". It was called Arizona by the Spaniards at least as early as 1736, and must have been known to the Indians by their name of Aleh-zon for probably many years prior to that date - how many no one can say. "Aleh" means small, and "zon" means spring.

A BRIEF HISTORICAL OUTLINE

Arizona, sixth largest in area of the fifty states, is situated in southwestern United States, and is bounded on the north by Utah and a corner of Colorado; east by New Mexico; south by Mexico; and west by California and Nevada. The northeast corner, where Arizona, Utah, Colorado and New Mexico meet is the only place in the United States where four states touch.

The territorial government was organized formally on December 29, 1863, at Navajo Springs. Early in 1864 the territorial officials moved to what is now Prescott, where they established the seat of government.

In 1868 the capital was moved to Tucson but was shifted to Prescott again in 1877. By an act of the Fifteenth Territorial Legislature in 1899, Phoenix was made the permanent capital. Arizona was admitted to statehood on February 14, 1912.

The first governor appointed for the Territory of Arizona was John Gurley, who died before leaving the east for his new post. John Goodwin received the appointment to fill the vacancy.

Richard E. Sloane was the last territorial governor, turning the office over to G.W.P. Hunt on February 14, 1912; the oath of office was taken by the first governor of the state one minute to 12 o'clock on that date.

Governor Hunt held the office continuously seven terms from 1912 to 1933 except from 1921-1923 when Thomas E. Campbell was chief executive and from 1929-1931 when John C. Phillips was governor.

Other Arizona governors: B.B. Moeur 1933-36; R.C. Stanford 1937-38; R.T. Jones 1939-40; Sidney P. Osborn 1941-May 25, 1948; Dan E. Garvey 1948-50; Howard Pyle 1951-54; Ernest W. McFarland 1955-58 and Paul Fannin current governor of Arizona. Sidney P. Osborn died in office in 1948.

A BRIEF OUTLINE OF GEOGRAPHY AND ECONOMY

Arizona, the nation's fastest growing state, has an area of 73,000 acres and a state population of 1,302,161. The largest city and capital is Phoenix which has a population of 439,170 and metropolitan population of 663,510.

The geography of Arizona rises to 12,670 feet near Flagstaff from 137 feet above sea level near Yuma. Across Northern Arizona lies the largest virgin pine forest in the world. Southern Arizona is an arid region covered with many varieties of cactus, among them the giant Saguaro cactus.

The economy of Arizona often is referred to with five "C's" - Cotton, Copper, Climate, Cattle and Citrus. To these since the war must be added a growing economy of manufacturing centered mostly in the electronic and aircraft industry.

THE STORY OF ARIZONA

HISTORY
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By Harry A. Gillis, Jr., Economist, Firstamerica Corp.

Arizona, the Grand Canyon State, is remarkable for its contrasts. In terms of occupation by man, Arizona's inhabitants make it one of the oldest of the United States. On the other hand, it is one of the youngest politically for only Alaska and Hawaii are newer members of the United States. In terms of climate, it ranges from sub-arctic conditions at the higher altitudes of some of its mountain ranges to the arid heat of the desert.

Arizona represents a harmonious combination of three cultures - - Indian, Spanish and American in order of their arrival - - all of which have had a continuing impact upon its life.

Because of this there is difficulty in saying when the story of Arizona should begin. One could start with the Indians who have a reasonably complete history running since 1100 A.D. Or, one could start with the arrival of the Spanish conquistadores and missionary priests in the early 1500's. A third choice would be to start either with the Mexican cession to the United States in 1848 of all lands west of Texas and north of the Gila River, or with the year 1850 when the United States Congress officially proclaimed its New Mexico Territory, embracing what are now the states of Arizona and New Mexico.

At this time, there already was - - or soon would be - - the production of three commodities to which Arizona's economy would be very closely tied for most of the next century. These products were the so-called "3 C's" - - cotton, cattle and copper. The Indians had been the first to grow cotton.

The Spanish mission fathers had introduced cattle. Copper would become important upon the discovery in 1854 of a rich copper vein leading to the opening of the first copper mine and the establishment of the town of Ajo. Up to about World War II these three commodities were the mainstays of economic activity in Arizona.

The completion of two transcontinental railroad lines through Arizona early in the 1880's provided for the first time ready access to the territory. Moreover, the capture and imprisonment of Geronimo and his outlaw Apaches in 1886 at last marked the end of Indian raids which had previously discouraged settlement. The subsequent wave of population growth may be seen in Chart and Table I.

In 1911, Roosevelt Dam was dedicated, the first in a series of dams that substantially increased the number of acres that could be irrigated. With this water, Arizona's fertile lands and nearly year-long growing seasons permitted three to five high-yield crops per year. It also permitted a growing diversity in the kinds of crops that could be grown.

The next memorable event that had a profound effect upon Arizona and its economy was World War II. The war led to many air bases being established in Arizona. The air bases and the ideally dry climate in turn brought aircraft component parts plants to the state. These and other newly attracted manufacturing plants continued to operate and expand in the post-war years. They were in fact the initial spark for the growth of manufacturing in Arizona.

The location of so many war workers, soldiers and their families in the State brought the scenic attractions and beneficial climate of the region to the attention of many Americans. Thus, in the post-war years, there has been a constant increase in the number of tourists visiting the State, many of whom have stayed to become permanent residents.

In the light of these trends, it is easy to understand the industrial distribution in Arizona of the sources of wage income, as may be seen in Chart and Table 2. Government wages loom large because of the civilian workers employed at air bases, electronic testing stations and national parks, as well as the usual governmental complement of teachers, firemen, police, et al. Employment in wholesale and retail trades are about in line with that for any populated American area; but the distribution within these trades is influenced by the importance of the tourist industry. The growing importance of manufacturing has already been mentioned. The fourth-ranking importance of contract construction is understandable in view of Arizona's rapid population growth --- third highest in the United States following only Nevada and Florida. The very substantial differences between the patterns of Arizona wage income and that of the entire United States indicate that many years, perhaps decades, of growth lie ahead of Arizona before it approaches the national pattern.

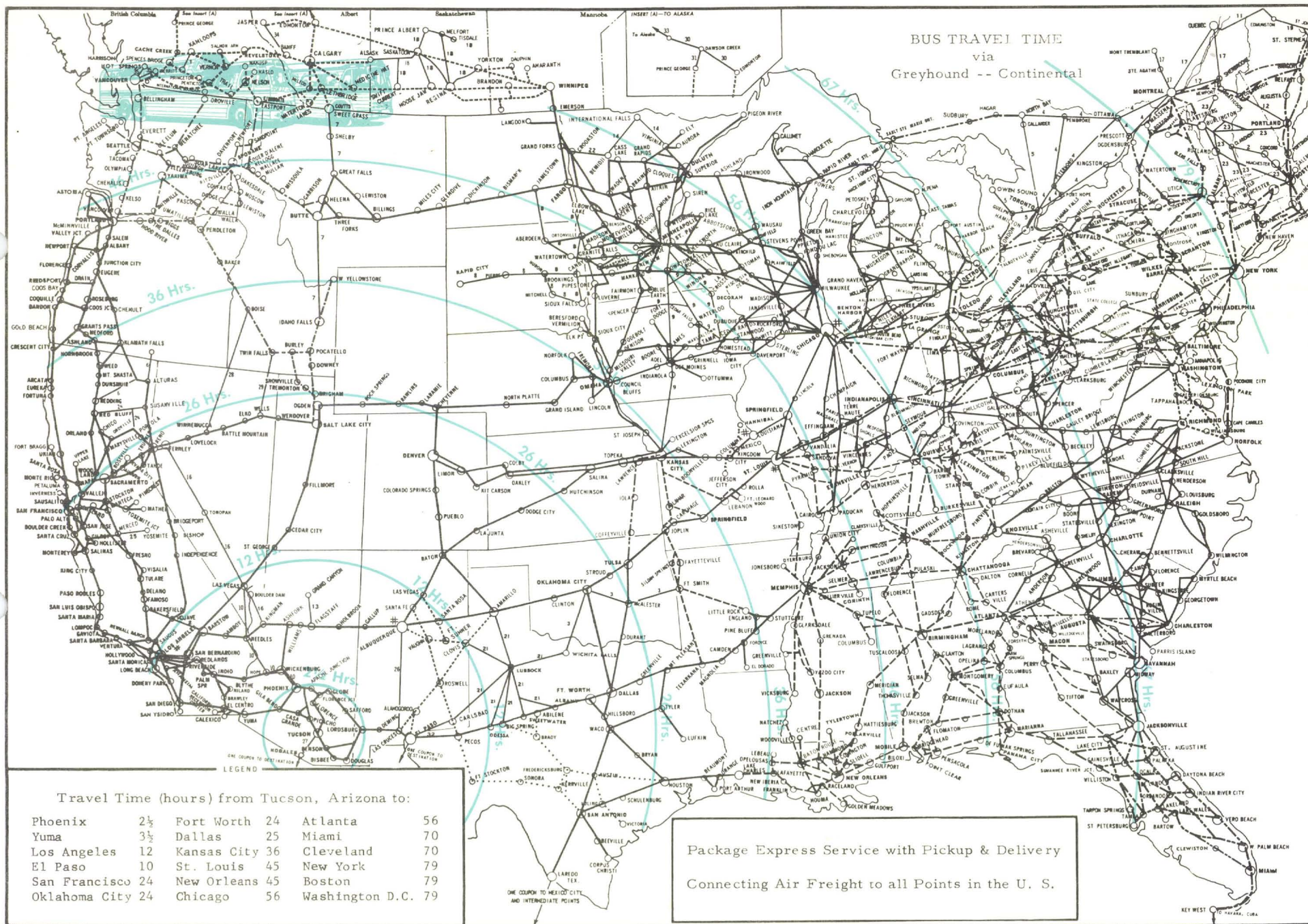
It has often been considered that extremely rapid population growth tends to depress income growth particularly if considered in terms of per capita income. This has not been the case in Arizona. As shown in Chart and Table 3, personal income since 1940 has consistently grown faster than the national average, and even that of the favored, fast-growing 11 western state region. In the period 1950-1958, Arizona ranked second among the fifty United States in the rate of personal income growth. As a result, per capita income has exhibited a gradually rising level in almost every year. In 1958, Arizona ranked 22nd among the fifty United States in per capita income. The fact that such income was less than the national average is no cause for concern inasmuch as there are only fourteen states having a per capita income above the national average.

The history of banking in Arizona is almost as fascinating as the history of its peoples. During the 1920's, there were over seventy banks in Arizona. The depression of the 1930's, however, took a heavy toll and narrowed the number of banks to roughly a dozen. At the end of 1947, the date at which Chart and Table 5 begin, there were ten banks in Arizona. This figure increased to thirteen in 1952 and 1953 and fell to six at the end of 1957. With the opening of the Bank of Phoenix in October of 1958, and the Bank of Tucson in July 1959, there were eight banks at year end 1959.

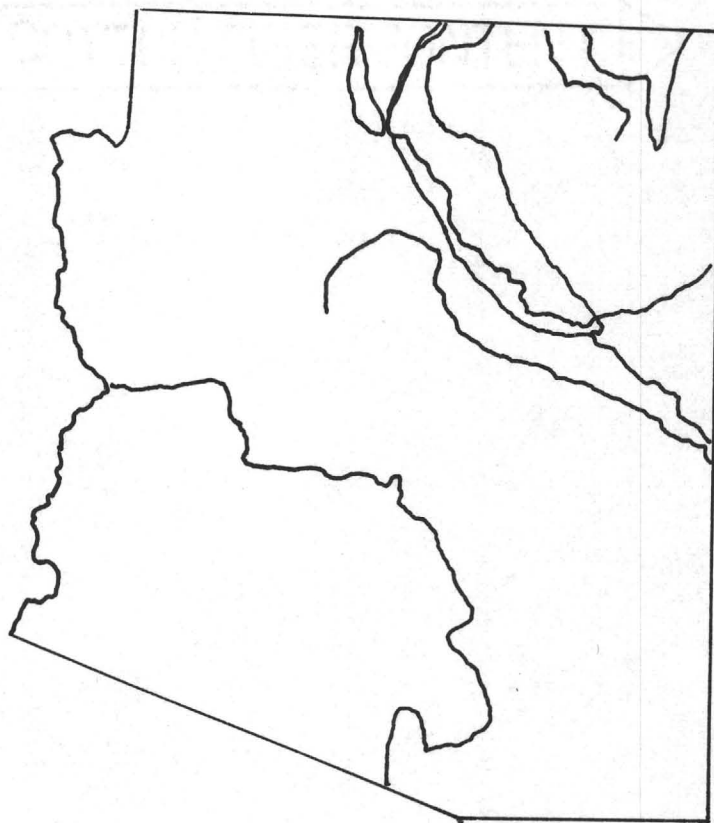
The trend of deposits in Southern Arizona Bank and Trust Company represents only natural growth. That bank has a long history of serving the city of Tucson but in 1956 widened its service area by opening a branch office in Nogales.

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We may sum up the story of Arizona by saying that both the past and potential future achievements of the State have been great and that the outlook for banking under such circumstances is a very bright one indeed.



For Any Additional Information Write To:
Arizona Development Board
1521 W. Jefferson Street
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THE STORY OF ARIZONA

DOUGLAS K. MARTIN
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CHRONOLOGICAL HIGHLIGHTS OF ARIZONA

- 800 (circa) Aborigines occupy caves along Rio Puerco.
- 1100 (circa) Pottery-making cliff dwellers are at Walnut Canyon.
- 1200 (circa) Oraibi, oldest continuously inhabited town in United States, is established.
- 1274-97 Great drought.
- 1300 (circa) Indian farmers in Gila and Salt River Valleys build and use 185-mile long irrigation canals.
- 1526 According to some evidence, Don Jose de Basconales, one of Hernando Cortes' lieutenants, reaches Zuni from Mexico - the first European to cross Arizona.
- 1539 Franciscan Friar Marcos de Niza, seeking Seven Cities of Cibola, and first white man definitely known to have explored Arizona, claims new land for Spain.
- 1582 Antonio de Espejo on exploratory expedition discovers silver ore west of what is now Prescott.
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- 1600 Franciscans build missions and convert Hopi in northeast Arizona.
- 1680 During large-scale uprising, Pueblo dwellers kill priests and burn missions.
- 1692-1700 Jesuits, particularly Padre Eusebio Francisco Kino, build missions in southern Arizona, among them the beautiful San Xavier del Bac, 9 miles south of Tucson. With Kino's death in 1711, missionary activity languished. Pima and Papago uprising in 1751 forces abandonment of all missions, but some priests return in 1753. In 1767, Jesuits are expelled from New Spain. In 1768, fourteen Franciscan priests under Padre Francisco Tomas Garces take over mission activity in Sonora (Mexico) and all villages to the north.
- 1752 Presidio established at Tubac in Santa Cruz Valley; moves to Tucson in 1776.
- 1810-22 Mexican wars of independence.
- 1824 Emperor of Mexico executed, and Republic founded.
- Territorio de Nuevo Mexico formed, including present states of Arizona and New Mexico. Capitol at Santa Fe has about 4,500 inhabitants. Western portion -- Arizona -- has largely been destroyed by Indians, especially Apaches; and has been abandoned except for Tubac and Tucson, each protected by a small garrison.

Chronological Highlights of Arizona
Page Two

- American trappers explore along Gila, Salt and Colorado Rivers.
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- 1846 United States declares war on Mexico. Colonel Stephen W. Kearny, commanding the Army of the West, takes Santa Fe; crosses Arizona en route to California.
- 1846-47 Mormon Battalion, unit of Army of the West, crosses Arizona marking first wagon road from Santa Fe to San Diego.
- 1848 Mexican War ends in February with the signing of the Treaty of Guadalupe Hidalgo. The Treaty sets the southern boundary of Texas at the Rio Grande and cedes to the United States all Mexican claims north of the Gila River (all of California, Nevada and Utah; parts of Colorado and Wyoming; and most of Arizona and New Mexico.
- 1850 U.S. Congress makes Arizona part of New Mexico Territory.
- 1853 James Gadsden, U.S. Minister to Mexico, negotiates \$10,000,000 purchase of 45,500 square miles of land lying south of Gila River extending New Mexico's and Arizona's southern boundary to present line. Purchased land included Tucson, Mesilla Valley, and possible course for trans-continental railroad following Mormon Battalion wagon trail.
- 1854 Rich copper vein discovered leading to opening first copper mine and establishment of town of Ajo.
- 1857 Edward F. Beale, successfully using camels as pack animals on a War Department Survey, works a route along the 35th parallel from Fort Defiance, New Mexico to the Colorado River. This course later is followed by the Santa Fe Railway and U.S. Highway 66.
- 1861 American settlers in Gadsden Purchase Area, later aided by a company of Texas Confederates, organize Confederate Territory of Arizona, comprising all that part of the Territory of New Mexico south of the 34th parallel. Mesilla made seat of government in 1862.
- 1862 Skirmish at Picacho Pass, the only engagement fought in Arizona during Civil War, regains tenuous control of region for the Union.
- 1863 On February 24, U.S. Congress creates Territory of Arizona with boundaries approximately as at present but including a part of lower Nevada.
- 1864 Temporary seat of territorial government fixed at Fort Whipple; but shortly thereafter moves 18 miles south with military camp. Governor's Mansion built and present town of Prescott grows up around Mansion. In 1867, capitol moves to Tucson; in 1877, returns to Prescott; and in 1889, Phoenix becomes a permanent seat of government.
- 1868 Settlement made near what is now Phoenix.
- 1877 George Warren locates the Copper Queen Mine in Bisbee.

Chronological Highlights of Arizona
Page Three

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- 1880 City of Phoenix incorporated.
- 1886 Capture and imprisonment of Geronimo and outlaw Apaches marks end of Indian raids.
- 1911 Dedication of Roosevelt Dam, first in a long series of dams that substantially increase the number of acres that can be irrigated.
- 1912 On February 14, Arizona admitted as 48th State.
- 1941-42 Establishment of many air bases, followed by aircraft component parts plants.
- 1952 Hughes Aircraft Company establishes near Tucson a plant for manufacturing electronic devices.
- 1954 Fort Huachuca reactivated as U.S. Army Electronic Proving Ground.

POPULATION GROWTH

CHART 1

POPULATION
IN THOUSANDS

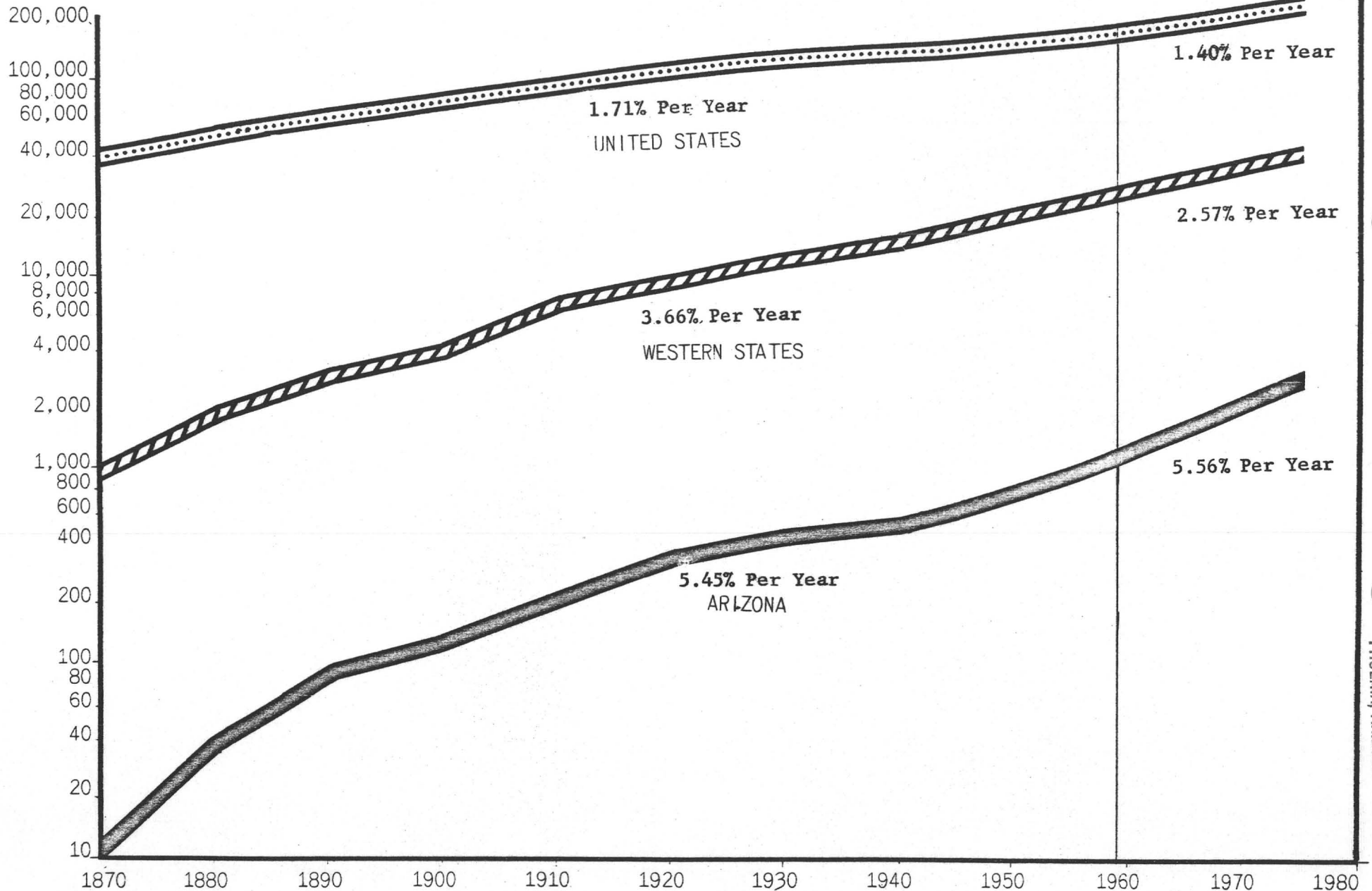


TABLE 1

TOTAL POPULATION OF UNITED STATES,
ELEVEN WESTERN STATES, AND ARIZONA

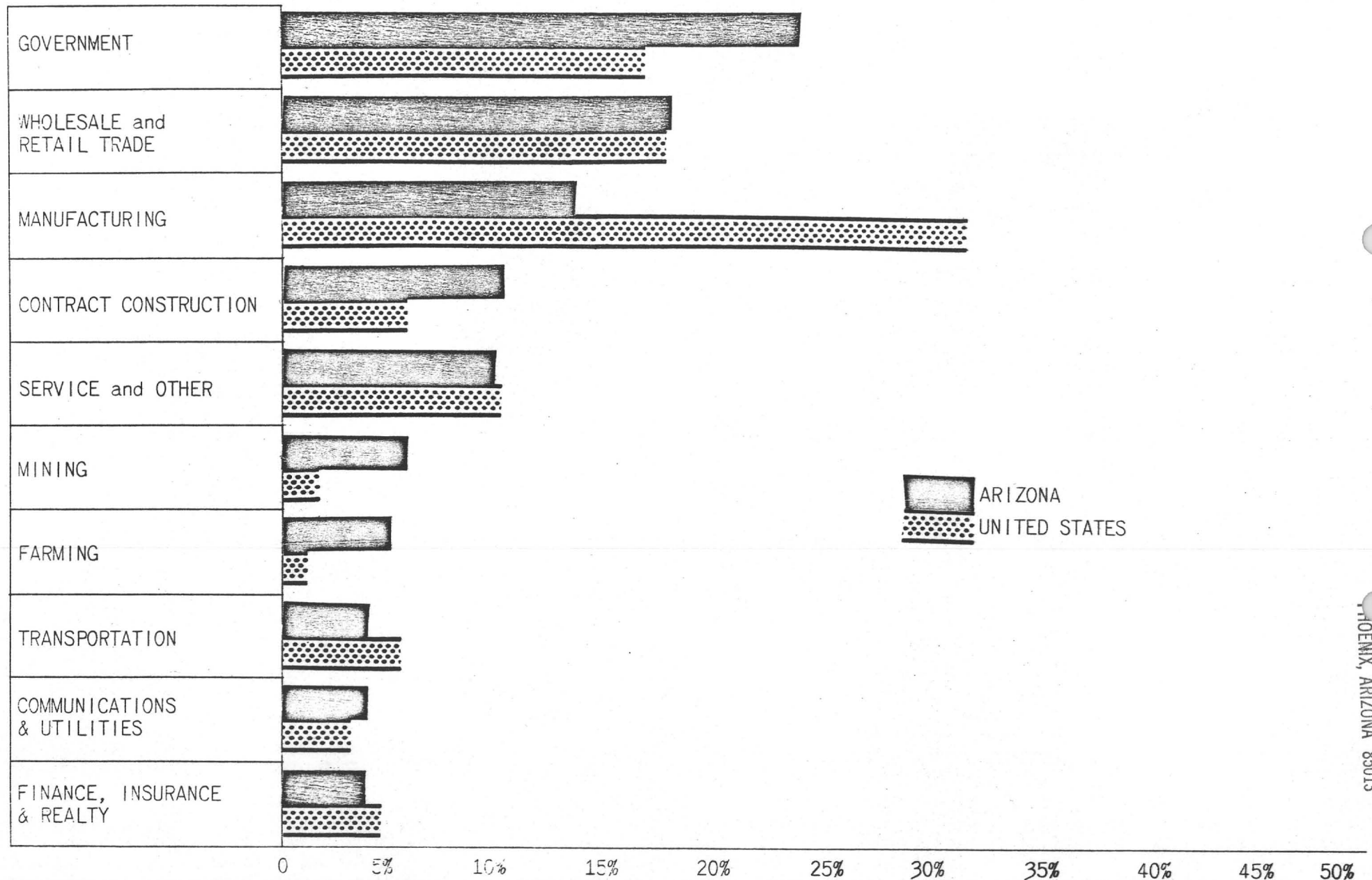
SELECTED YEARS, 1870 - 1975
(in thousands)

<u>Year</u>	<u>United States</u> (50)	<u>Western States</u> (11)	<u>Arizona</u>
Census of:			
1870	38 558	991	10
1880	50 156	1 768	40
1890	62 948	3 102	88
1900	75 995	4 091	123
1910	91 972	6 826	204
1920	105 711	8 903	334
1930	122 775	11 896	436
1940	131 669	13 883	499
1950	150 697	19 562	750
Estimated:			
1959	176 365	25 852	1 233
Projected:			
1965	192 595	30 493	1 750
1970	208 346	34 634	2 300
1975	220 794	39 021	3 000
Annual rate of increase (compounded continuously):			
1870 through 1959	1.71%	3.66%	5.45%
1959 through 1975	1.40%	2.57%	5.56%

PERCENT DISTRIBUTION

INDUSTRIAL SOURCES OF WAGE INCOME-1958

CHART 2



DOUGLAS K. MARTIN
315 W. MONTEROSA
PHOENIX, ARIZONA 85013

TABLE 2

INDUSTRIAL SOURCES OF WAGE INCOME

ARIZONA vs. UNITED STATES, 1958

<u>Industrial Source:</u>	<u>Arizona</u>	<u>48</u> <u>United States</u>
Government	24.5%	17.1%
Wholesale and Retail Trade	18.4	18.2
Manufacturing	13.8	32.4
Contract Construction	10.6	5.9
Service and Other	10.0	10.3
Mining	5.8	1.6
Farming	5.0	1.2
Transportation	4.0	5.6
Communications & Utilities	4.0	3.1
Finance, Insurance & Realty	<u>3.2</u>	<u>4.6</u>
Total Wage Income	100.0%	100.0%
Millions of Dollars	\$1,463	\$236,671

PERSONAL INCOME (*SELECTED YEARS*)

CHART 3

DOUGLAS K. MARTIN
315 W. MONTEROSA
PHOENIX, ARIZONA 85013

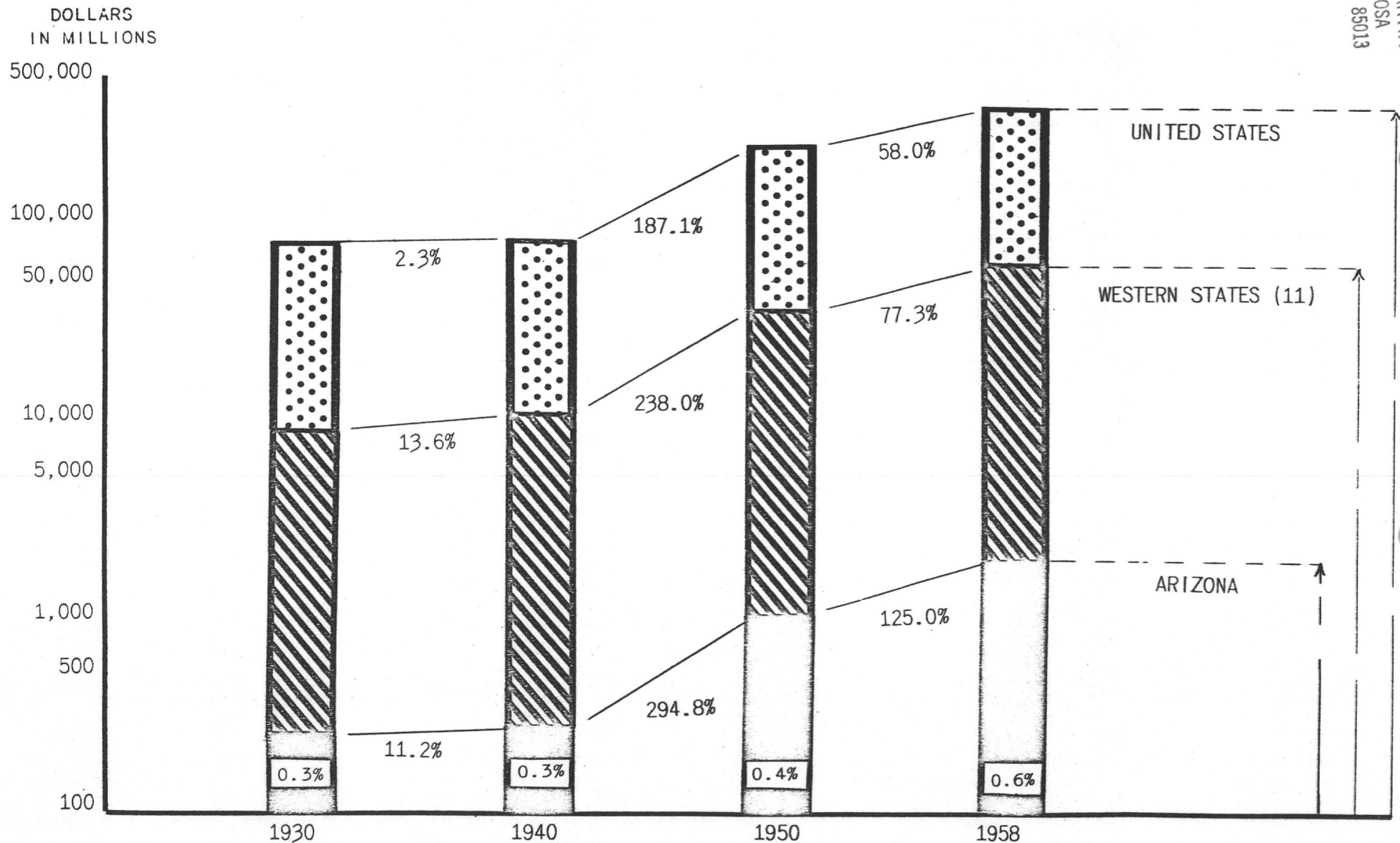


TABLE 3

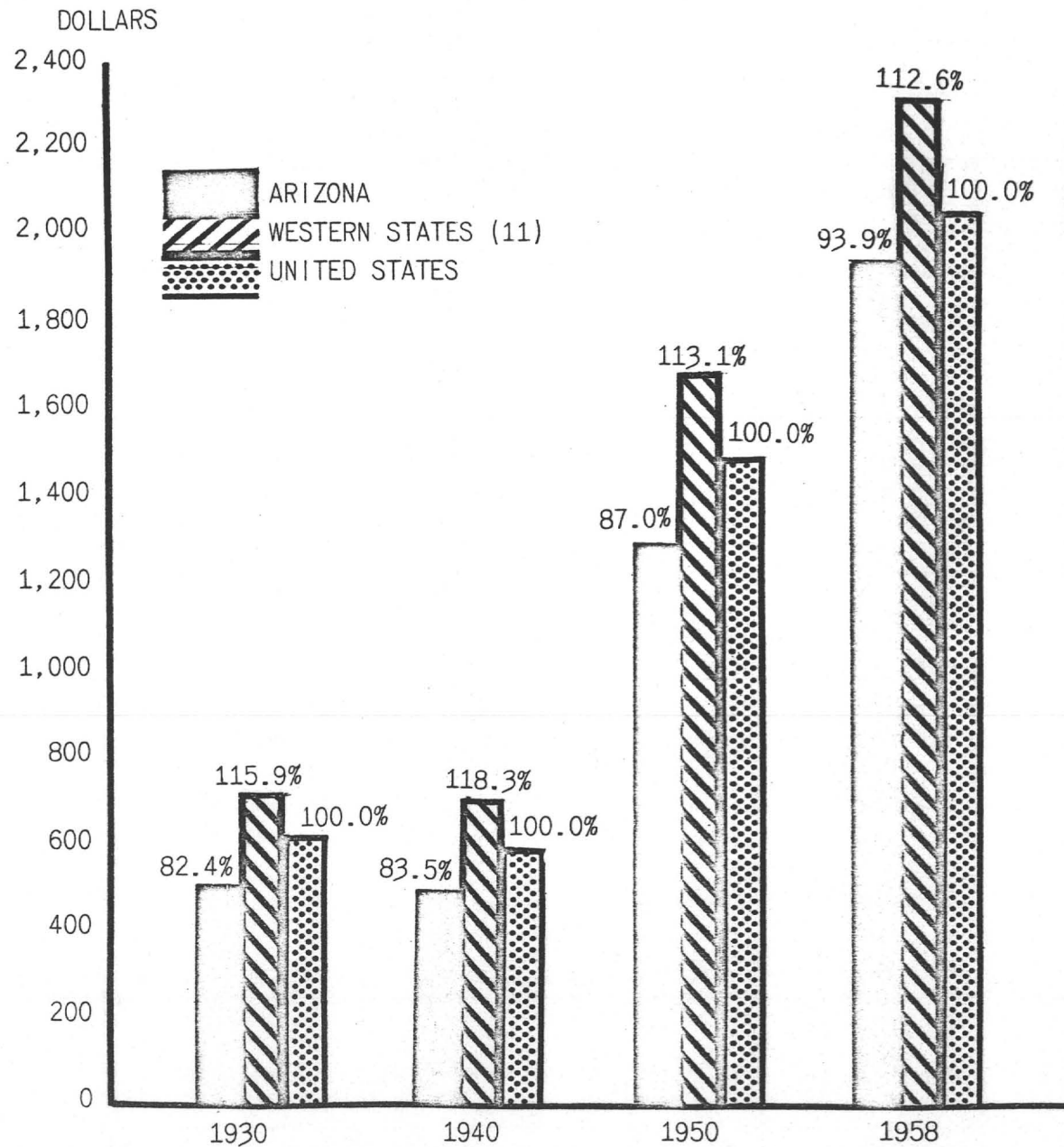
PERSONAL INCOME

SELECTED YEARS

	<u>United States</u>	<u>Western States</u>	<u>Arizona</u>
<u>Dollars in Millions</u>			
1930	\$ 76 780	\$ 8 641	\$ 223
1940	78 522	9 812	248
1950	225 473	33 165	979
1958	356 328	58 801	2 203
<u>% Increase During Period</u>			
1930 to 1940	2.3%	13.6%	11.2%
1940 to 1950	187.1	238.0	294.8
1950 to 1958	<u>58.0</u>	<u>77.3</u>	<u>125.0</u>
1930 to 1958	364.1%	580.5%	887.9%
<u>% of United States</u>			
1930	100.0%	11.3%	0.3%
1940	100.0	12.5	0.3
1950	100.0	14.7	0.4
1958	100.0	16.5	0.6

PER CAPITA INCOME (Selected Years)

CHART 4



DOUGLAS K. MARTIN
315 W. MONTEROSA
PHOENIX, ARIZONA 85013

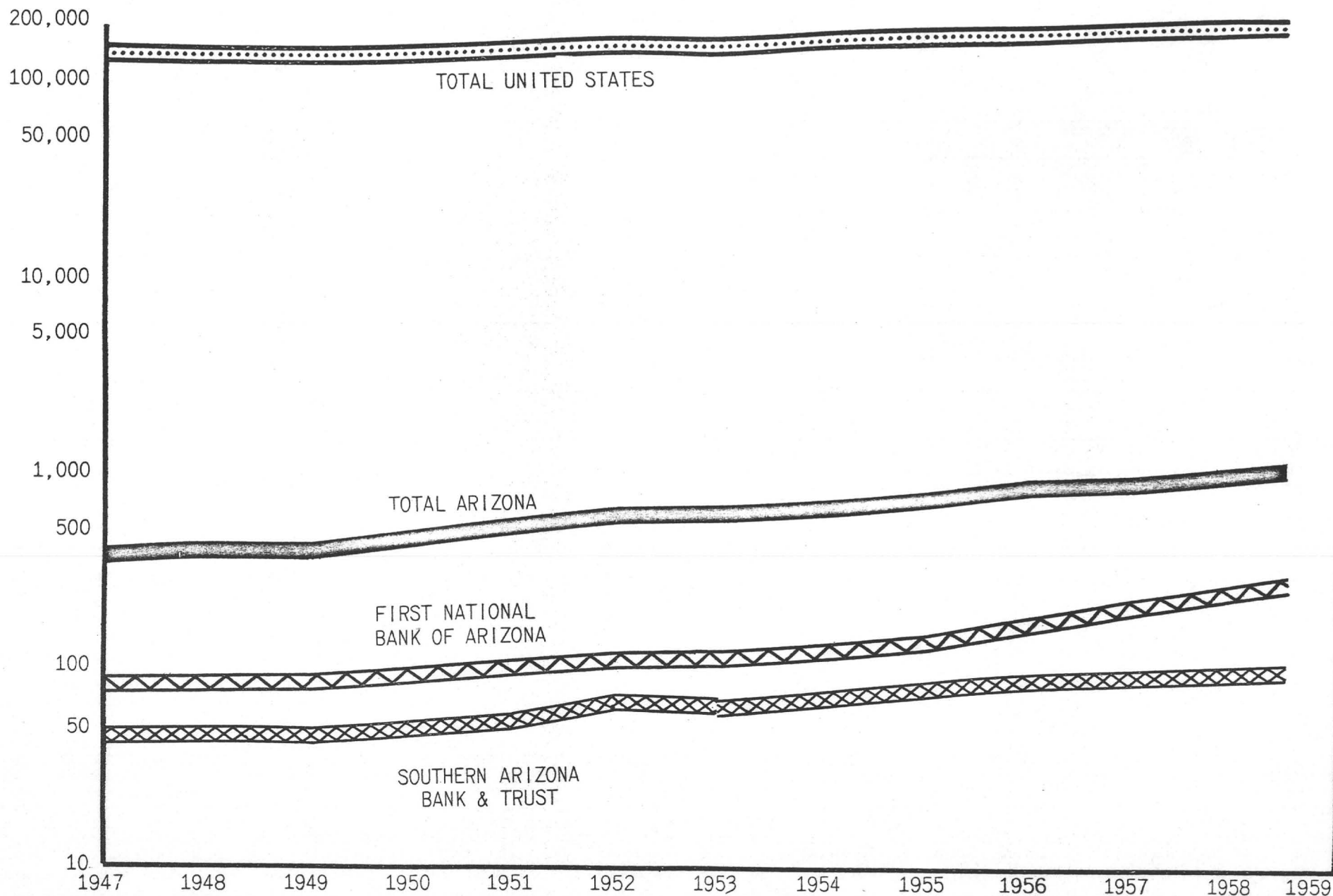
TABLE 4
PER CAPITA INCOME
SELECTED YEARS

	<u>United States</u>	<u>Western States</u>	<u>Arizona</u>
<u>Dollars</u>			
1930	\$ 624	\$ 723	\$ 514
1940	595	704	497
1950	1 491	1 687	1 297
1958	2 057	2 317	1 932
<u>% Increase During Period</u>			
1930 to 1940	-4.6%	-2.6%	-3.3%
1940 to 1950	150.6	139.6	161.0
1950 to 1958	<u>38.0</u>	<u>37.3</u>	<u>49.0</u>
1930 to 1958	229.6%	220.5%	275.9%
<u>United States = 100%</u>			
1930	100.0%	115.9%	82.4%
1940	100.0%	118.3	83.5
1950	100.0%	113.1	87.0
1958	100.0%	112.6	93.9

TOTAL DEPOSITS OF COMMERCIAL BANKS

CHART 5

DOLLARS
IN MILLIONS



DOUGLAS K. MARTIN
315 W. MONTEROSA
PHOENIX, ARIZONA 85013

TABLE 5

DOUGLAS K. MARTIN
315 W. MONTEROSA
PHOENIX, ARIZONA 85013TOTAL DEPOSITS OF COMMERCIAL BANKS

1947 - 1959

	<u>First National Bank of Arizona</u>	<u>Southern Arizona Bank & Trust</u>	<u>All Arizona Banks</u>	<u>United States</u>
<u>Millions of Dollars</u>				
December 31 of 1947	\$ 85	\$ 47	\$ 413	\$143 376
1948	87	49	423	142 843
1949	84	47	416	145 174
1950	97	51	471	155 265
1951	111	62	533	164 840
1952	131	71	612	172 931
1953	137	70	636	176 702
1954	149	75	694	184 753
1955	164	84	754	192 249
1956	209	89	854	197 509
1957	255	92	907	201 306
1958	291	104	1 036	215 995
June 1959	308	112	1 107	207 157
<u>% Increase During Period</u>				
12-31-47 to 12-31-56	144.7%	89.4%	106.7%	37.8%
12-31-56 to 12-31-58	39.9	16.9	21.3	9.4
12-31-58 to 6-59	5.8%	7.7%	6.8%	-4.1%
<u>% Distribution</u>				
	<u>% of Arizona</u>		<u>% of U.S.</u>	
December 31 of 1947	20.6%	11.4%	0.29%	
1950	20.6	10.8	0.30	
1956	24.5	10.4	0.43	
1957	28.1	10.1	0.45	
1958	28.1	10.0	0.48	
June 1959	27.8	10.1	0.53	

CHRONOLOGICAL HIGHLIGHTS OF ARIZONA

- 800 (circa) Aborigines occupy caves along Rio Puerco.
- 1100 (circa) Pottery-making cliff dwellers are at Walnut Canyon.
- 1200 (circa) Oraibi, oldest continuously inhabited town in United States, is established.
- 1274-97 Great drought.
- 1300 (circa) Indian farmers in Gila and Salt River Valleys build and use 185-mile long irrigation canals.
- 1526 According to some evidence, Don Jose de Basconales, one of Hernando Cortes' lieutenants, reaches Zuni from Mexico - the first European to cross Arizona.
- 1539 Franciscan Friar Marcos de Niza, seeking Seven Cities of Cibola, and first white man definitely known to have explored Arizona, claims new land for Spain.
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Chronological Highlights of Arizona
Page Two

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Chronological Highlights of Arizona
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REPORT ON ARIZONA LANDS
INCLUDING
INVENTORY OF ARIZONA LANDS AS OF JUNE 30, 1971

BOARD OF GOVERNORS

William T. Elzing, Phoenix - Chairman
(term expires January 31, 1976)

Samuel L. Lark, Tucson
(term expires January 31, 1973)

Robert C. Rogers, Bagdad
(term expires January 31, 1974)

Robert H. Kettner, Tucson
(term expires January 31, 1975)

Walter Heinrichs, Jr., Tucson
(term expires January 31, 1977)

ARIZONA DEPARTMENT OF MINERAL RESOURCES

John H. Jett, Director

K. A. Phillips

Mineral Building,

Fairgrounds

Phoenix,

85007

December, 1972

BOARD OF GOVERNORS

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Robert C. Bogart, Bagdad
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REPORT ON ARIZONA LANDS
INCLUDING
INVENTORY OF ARIZONA LANDS AS OF JUNE 30, 1971

The ownership and administration of land has always had a great effect on the ability of the minerals exploration and production industries to supply people the necessary mineral materials to acquire and sustain a reasonable standard of living. In Arizona, as in most western states, most of the land is owned or directly controlled by one or more State or Federal agencies. Due to public pressure these agencies are establishing more restrictive controls on mining operations so as to better protect the landscape. This report covers the distribution of Arizona's lands as of June 30, 1971 and revenues therefrom in fiscal 1970-71. The data and tables have, in part, been compiled from reports of the General Services Administration and the State Land Commissioner.

The total area of Arizona including that covered by water is 72,688,000 acres. This total is divided as follows:

70.96% owned or controlled by the Federal Government.

43.96% directly owned by the Federal Government.

27.00% held in trust by the Federal Government for the Indian Tribes.

13.21% trust land of the State of Arizona under State Land Department jurisdiction.

15.83% privately owned or belonging to State, County or City agencies other than the State Land Department.

Of the total 50.4 million acres of trust property (mostly Indian Tribal Lands) under Federal control in the United States, 38.9% are in Arizona. New Mexico ranks second with 13.7% of the trust properties. These data are shown in Table II.

Table I shows the percentage of federally owned or controlled land in each county. The Federal Government owns or controls over 50% of the land in all but three Arizona counties.

TABLE I *

Gila	95.29%
Yuma	84.53%
Greenlee	79.16%
Coconino	77.52%
Navajo	75.99%
Mohave	74.67%
Graham	73.21%
Apache	72.83%
Pima	69.83%
Maricopa	61.52%
Santa Cruz	56.43%
Yavapai	49.97%
Pinal	38.85%
Cochise	22.95%

* Source: Department of Economic Planning & Development

Table III shows the distribution of federally owned land in Arizona by predominant usage. The largest acreages are used for grazing, and for forest and wildlife with each category having nearly 13 million acres. Military areas use a little over 3.5 million acres, parks and historic sites 1.6 million acres and reclamation, irrigation, flood control and power development total about 1.5 million acres.

A considerable amount of the Federal Land is either closed to mining or open to mining only under tight regulation. Of the nearly 13 million acres of forest and wildlife lands, almost 700 thousand acres are classified as Wilderness or Primitive Areas and another 700 thousand acres could be considered acceptable for possible wilderness areas. Tightly controlled prospecting and mining will be allowed in Primitive and Wilderness areas until 1983 at which time the areas will be withdrawn from mineral entry. As of 1983, possible mineral values to mankind will be sacrificed for wilderness values in areas included under the Wilderness Preservation System. The 3.5 million acres of military lands are mostly bombing and gunnery ranges and are withdrawn from all types of entry including mining for reasons of public safety. All National Park Service lands (approximately 2.9 million acres) which include most of the 1.6 million acres shown in Table III as Park and Historic Sites are closed to mining except the Organ Pipe Cactus National Monument where mineral entry is allowed under tightly controlled conditions. The nearly 1.5 million acres used for reclamation, irrigation, flood control and power development have been withdrawn from mineral entry in most areas. Each parcel of land that is withdrawn from mineral entry further limits the amount of land open to the search for new mineral resources. Considering the shortage in mineral materials forecast by both government and industry leaders, land management agencies should carefully analyze any proposed mineral withdrawal and its effect on the mineral resources of our nation prior to actual withdrawal.

Although at first glance, large areas in Arizona appear to comprise vacant unappropriated and unreserved public lands open to unrestricted prospecting and the location of mining claims, many areas are not open and the actual status of a particular area may be quite complex. It is suggested

that one obtain a copy of this department's booklet "Laws and Regulations Governing Mineral Rights in Arizona" as a guide to proper procedures in locating claims or acquiring leases or other mineral rights.

The booklet also explains the rights of a mineral locator, under the mining law, especially since the enactment of The Multiple Surface Use Act of 1955 which prohibited any use of subsequently located unpatented mining claims other than for the purposes of prospecting, mining or processing operations and uses reasonably incident thereto. The necessity of a mineral discovery before a claim can become valid is also fully discussed.

As of June 30, 1971 Arizona had 11.35 million acres of public land unsurveyed, the third highest percentage (15.6) of unsurveyed lands in any of the conterminous United States. Only 7 percent of the public lands outside of Alaska are unsurveyed, all of it being in the eleven western states.

STATE TRUST LANDS

The total of lands granted by the federal government to the state or acquired otherwise by the state in the past, is 10,849,900 acres (See Table V). Of this total, 8,334,950 acres were grant lands for the support of common schools; university, college and other institutional grants amounted to 2,451,295 acres; and 63,655 acres were acquired by the state through special grants, purchases, exchanges and accretions.

Up to June 30, 1971 the state has deeded to private parties 899,779 acres of its trust lands and has placed 1145,838 acres under sales contracts; indemnity base lands amounting to 185,495 acres in and 7,615 acres outside of the National Forest, either have not been selected or have been selected and not approved; and 5,776 acres are of uncertain ownership. Deduction of these lands leaves 9,605,289 acres of trust lands held available for lease by the

State Land Department as of June 30, 1971. The surface of all except 55,107 acres of the available lands was leased, and sub-surface leases in 1971 aggregated 1,892,922 acres - 6 percent lower than in 1970.

Table IX shows acreages of State Land Department leases and receipts therefrom. The largest surface acreage was covered by grazing leases - over 9 million acres in 1971. Agriculture occupied only 200,000 acres but paid almost 59% more rental than grazing leases. 1.7 million acres, or 89% of the acreage of subsurface leases were oil and gas leases. Mineral leases, with only 55,000 acres, paid slightly over a tenth as much rental in 1971 as oil and gas leases but its total of rentals plus royalties was about ten times greater than that of the oil and gas leases. The oil and gas leased acreage was 7 percent lower than in 1970.

Table X shows the sub-surface acreage of prospecting permits, mineral, and oil and gas leases in each county. Pinal County had the biggest acreage of prospecting permits and mineral leases, as it did in 1970. Pima again was next in both categories, but its acreage of mineral leases dropped 1 percent while Pinal's increased 10 percent and its acreage of prospecting permits increased 6 percent while Pinal's decreased 30 percent. Acreages covered by prospecting permits were in all counties except Apache and Coconino, although Navajo had only 20 acres. There were state oil and gas leases in all counties except Gila and Greenlee, with Cochise having the largest acreage, as in 1970; while Pima and Pinal remained in second and third place. Decreases in oil and gas lease acreage occurred in all counties except Yavapai.

Tables VI, VII, and VIII give summaries of the areas of: surface and sub-surface leases, Land Department receipts from all sources, and lease royalties received in 1970 and 1971. Although a drop in total receipts in 1971

over 1970 is shown, the drop is not realistic due to the large royalties collected in 1970 when accounts were brought up to date. The income from royalties is favorably compared to 1969 when royalties were 1.4 million.

Table XI gives annual sub-surface lease receipts by type of lease for the period 1960 through 1970. The enormous growth in mineral royalties in the period, started with development of ores on state lands following the earlier discovery and development of copper ores on adjacent lands in the Pima Mining District south of Tucson.

TABLE II
DISTRIBUTION OF ARIZONA LANDS
As of June 30, 1971

	<u>Acres</u>	<u>% of Total</u>
Federally Owned Lands (1)	31,954,586	43.96
Trust Properties in Custody of the Federal Government, almost entirely Indian tribal lands (1)	19,625,429	27.00
State of Arizona (Trust Lands) (2)	9,605,287	13.21
Other Lands (3)	<u>11,502,698</u>	<u>15.83</u>
Total Land Area (1)	72,688,000	100.00

- (1) Source: Inventory Report on Real Property Owned by the United States Throughout the World as of June 30, 1971; prepared by General Services Administration.
- (2) Source: 59th Annual Report of the State Land Department for July 1, 1970 through June 30, 1971. Figure does not include 185,495 acres within and 7,616 acres outside of the National Forests for which indemnity lands have not been received.
- (3) Patented and owned by individuals and corporations, or deeded to state and local government agencies other than the State Land Department. Determined by difference.

TABLE III

FEDERAL LAND WITHIN ARIZONA, BY PREDOMINANT USAGE

	ACRES* <u>June 30, 1970</u>	ACRES* <u>June 30, 1971</u>	1971 % of <u>Total</u>
Agricultural	75.9	75.9	.00
Grazing	12,601,702.8	12,571,096.8	39.34
Forest & Wildlife	12,970,578.2	12,961,621.8	40.56
Parks & Historic Sites	1,597,769.2	1,599,352.2	5.01
Office Building Locations	55.5	39.6	.00
Military (except airfields)	3,504,003.9	3,504,839.9	10.97
Airfields	16,524.6	16,603.6	.05
Power Development & Distribution	609,422.6	268,468.3	.84
Reclamation & Irrigation	931,463.3	927,502.7	2.90
Flood Control & Navigation	43,133.7	43,133.7	.13
Vacant	394.3	394.3	.00
Institutional	1,569.5	1,569.5	.01
Housing	54.6	55.0	.00
Storage	28,401.4	28,403.4	.09
Industrial	2,185.0	2,185.0	.01
Research & Development	28,229.2	28,229.2	.09
Other Land	1,013.3	1,014.7	.00
TOTAL	32,336,577.0	31,954,585.6	100.00

* Source: Inventory Report on Real Property Owned by the United States Throughout the World as of June 30, 1971; prepared by General Services Administration.

TABLE IV

AREA OF SURVEYED AND UNSURVEYED LANDS IN ARIZONA, 1786-1971

<u>SURVEYED</u>	<u>UNSURVEYED</u>	<u>% UNSURVEYED</u>
61,329,385	11,350,935	15.62

Source: U. S. Department of the Interior, Public Land Statistics - 1971

TABLE V

ARIZONA TRUST LANDS GRANTED AND/OR ACQUIRED

As of June 30, 1971

Source: 59th Annual Report of the State Land Commissioner

		Acres
School Grants <u>1/</u>		8,334,950
Univ., College and Other Institutional Grants <u>2/</u>		2,451,295
Farm Loan Lands <u>3/</u>		22,238
Special Grants: Airfields <u>4/</u>	7,310	
Other	<u>3,746</u>	11,056
Net gain from exchanges and accretions		<u>30,361</u>
Total Trust Lands Granted and/or Acquired		10,849,900
LESS:		
Lands Patented, Deeded, or Committed	899,779	
Lands under sale contracts	145,838	
Indemnity Base Lands not received		
In National Forests	185,495	
Outside National Forests	7,615	
Lands of undetermined ownership	5,776	
Other adjustments	<u>108</u>	<u>1,244,611</u>
Total State of Arizona Trust Lands 6-30-71		9,605,289

1/ Grants for the Support of Common Schools. The Enabling Act of June 20, 1910, granted to the State of Arizona specific lands for the support of the "Common Schools", namely sections 2, 16, 32 and 36 in every township, upon being surveyed, provided the lands were not otherwise entered upon, sold, reserved, or otherwise appropriated at the date of this Act, and excepting all or any part thereof classified mineral in character. This restraint from taking title to lands mineral in character, remained in force until changed by the Act of January 25, 1927. Where the lands in sections granted to the State have been preempted, sold, or otherwise disposed of, the State has been given the right of lieu selection from open lands of the public domain. Deficiencies of school lands in fractional townships have been adjusted in accordance with provisions of the Enabling Act.

2/ University, Colleges and Other Institutional Grants. By an Act of February 18, 1881, the Territory of Arizona was granted 72 sections of the unappropriated public lands within the said Territory, to be immediately selected, withdrawn from sale, and located under the direction of the Secretary of the Interior, with the approval of the President of the United States, for the use and support of a University in said Territory when admitted as a State into the Union. In addition to the grants mentioned above, the Enabling Act also made specific acreage grants for the support of various institutions of the State.

3/ Farm Loan Lands. After a Farm Loan Program was enacted by the State Legislature, March 14, 1944, the State was able to acquire 22,238 acres of public lands.

4/ Special Grants. From the time of statehood, Arizona has acquired parcels of land by special grants and quit-claim deeds. Other than the grant of Papago Park for recreational purposes and a few lessor acquisitions, the special grant lands were airfields that had been declared surplus by the War Assets Administration, plus some lands separately granted.

TABLE VI

SUMMARY OF LEASED AREAS OF ARIZONA TRUST LANDS

	<u>As of June 30th</u>		<u>Increase (Decrease)</u>
	<u>1970</u>	<u>1971</u>	<u>%</u>
<u>Surface Only:</u>			
Aggregate area of leases	9,565,965	9,572,664	0.07
Less areas which coincide	24,412	22,483	(7.94)
Area covered by one or more leases	9,541,553	9,550,181	.09
Area not leased	52,036	55,107	5.90
Total Trust Lands	9,593,589	9,605,288	0.12
<u>Sub-surface Only:</u>			
Area leased	2,013,957	1,892,922	(6.00)
Area not leased	7,029,033	7,164,495	1.92
Total available for lease	9,042,990	9,057,417	0.15

TABLE VII

SUMMARY OF STATE LAND DEPARTMENT RECEIPTS FROM ALL SOURCES

	<u>1970 Fiscal</u>	<u>1971</u>	<u>Increase (Decrease)</u>
			<u>%</u>
Leasing Rentals, Penalties & Interest	\$ 3,523,131	3,285,246	(6.75)
Leasing Royalties and Fees	4,688,869	2,527,044	(46.10)
Land Sales Principal	2,436,553	2,984,444	22.48
Land Sales, Interest	1,430,702	1,422,103	(0.60)
Federal Government Remittances	73,252		(100.00)
Other	65,019	453,509 3/	597.50
Total	\$12,217,526	10,672,346	(12.64)

TABLE VIII

LEASE ROYALTIES RECEIVED

	<u>1970 Fiscal</u>	<u>1971</u>	<u>Increase (Decrease)</u>
			<u>%</u>
<u>Lease</u>			
Mineral	4,492,339	2,247,897	(49.96)
Mineral Materials 1/	89,923	241,676	168.75
Oil & Gas	8,478	7,396	(12.85)
Commercial water	25,738	30,076	16.85
Other			
Totals	4,616,478 2/	2,527,045	(45.04)

1/ Mostly road material for state highways.

2/ Adjusted. Accounts brought current.

3/ Federal Government Remittances included with other in 1971.

Source: 58th and 59th Annual Reports of the State Land Commissioner.

TABLE IX

ACREAGES OF STATE LAND DEPARTMENT LEASES AND RECEIPTS THEREFROM

Fiscal Year Ending June 30th	1970		1971	
	Acres	Receipts Rental	Acres	Receipts Rental
<u>Surface Leases</u>				
Agriculture	215,214	\$1,229,875	198,363	\$1,171,453
Grazing	9,089,354	642,126	9,110,118	756,814
Commercial	77,850	455,553	78,700	498,592
Homesites	188	814	150	1,124
Rights of Way	79,847	276,912	80,575	161,961
Special Use Permits	691	1,968	822	12,751
U. S. Contracts	102,821	201,174	103,935	74,144
Total Surface	9,565,965	\$2,808,422	9,572,663	\$2,676,839
<u>Sub-surface Leases</u>				
Minerals & Mineral Mat'ls	55,132	46,046	58,471	55,517
Prospecting Permits	97,323	148,716	90,925	126,182
Oil & Gas	1,815,258	456,579	1,694,161	414,366
U. S. Contracts	46,244	46,244	49,366	12,341
Total Sub-surface	2,013,957	\$ 697,585	1,892,923	\$ 608,406
Total Rental Receipts		\$3,506,007		\$3,285,245
Leasing Fees (Other)		\$ 72,391		—
Royalties		\$4,616,478		\$2,527,044
Total Rental Rcts., Fees & Royalties		\$8,194,876		\$5,812,289
Penalties and interest, not included above\$		17,125		

Rental Receipts per Acre(Leasing fees and royalties excluded)

Average, Surface and Sub -surface	\$0.3028	\$0.3005
Grazing	\$0.0501	\$0.0830
Minerals & Min's Mat'ls	\$0.8352	\$0.9683
Oil & Gas	\$0.2515	\$0.2446

Lease rental per acre per year on mineral claims is 75 cents, and on oil & gas leases is 25 cents.

Source: 58 and 59th Annual Reports of the State Land Commissioner.

TABLE X

SUB-SURFACE ACREAGE UNDER LEASE BY COUNTY BY TYPE OF LEASE

1971

County	Prospecting Permits	Mineral Materials	Mineral	Oil & Gas	U.S. Contracts	GRAND TOTAL
Apache		215	80	178,316		178,611
Cochise	18,189	1,215	2,044	372,213		393,661
Coconino	-	356	729	14,774		15,859
Gila	640	-	620	-		1,260
Graham	7,732	40	2,924	11,056		21,752
Greenlee	1,525	129	460	-		2,114
Maricopa	2,400	1,424	3,734	236,676		244,234
Mohave	1,721	531	740	18,507		21,499
Navajo	20	403	576	72,173		73,172
Pima	19,510	1,311	12,290	282,484		315,595
Pinal	34,401	655	22,982	260,294		318,332
Santa Cruz	713	70	20	80		883
Yavapai	2,621	672	3,120	28,263		34,676
Yuma	1,454	816	313	219,322	49,366	271,271
Total 1971	90,926	7,837	50,632	1,694,158	49,366	1,892,919
Total 1970	97,323	5,929	49,204	1,815,258	46,243	2,013,957

TABLE XI

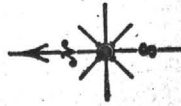
SUB-SURFACE LEASING RECEIPTS BY TYPE OF LEASE 1/

A				B		
Rental and Royalty Receipts				All Sub-surface lease Receipts		
Year	Prospecting Permits	Mineral <u>2/</u> Materials and Mineral <u>2/</u>		Rental	Royalties <u>3/</u>	Total
1960	\$ none	\$127,735		\$474,025	\$ 50,504	\$ 524,529
1961	none	100,319		448,825	59,750	508,575
1962	71,676	257,538		476,462	221,143	697,605
1963	36,626	44,882 <u>4/</u>		430,054	270,341	700,395
1964	193,681	34,608 <u>4/</u>		547,863	138,623	686,486
1965	159,035	34,696 <u>4/</u>		534,731	121,984	656,715
1966	85,265	35,256 <u>4/</u>		346,036	155,922	501,958
1967	113,483	655,843		338,737	782,064	1,120,801
1968	166,731	\$430,146	\$886,922	412,114	1,280,734	1,692,848
1969	119,952	371,025	923,492	445,059	1,339,105	1,784,164
1970	148,716	96,138	4,532,505	699,125	4,590,770	5,289,895
1971	126,182	257,611	2,287,469	608,407	2,527,044	3,135,451

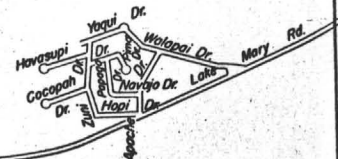
1/ Includes rental receipts, penalties and interest, and royalties.2/ does not include oil and gas, helium, or U.S. Contracts.3/ Prior to 1967, water royalties are included.4/ Rental receipts, penalties and interest, only. Mineral royalty not separately reported.

MAP OF FLAGSTAFF ARIZONA

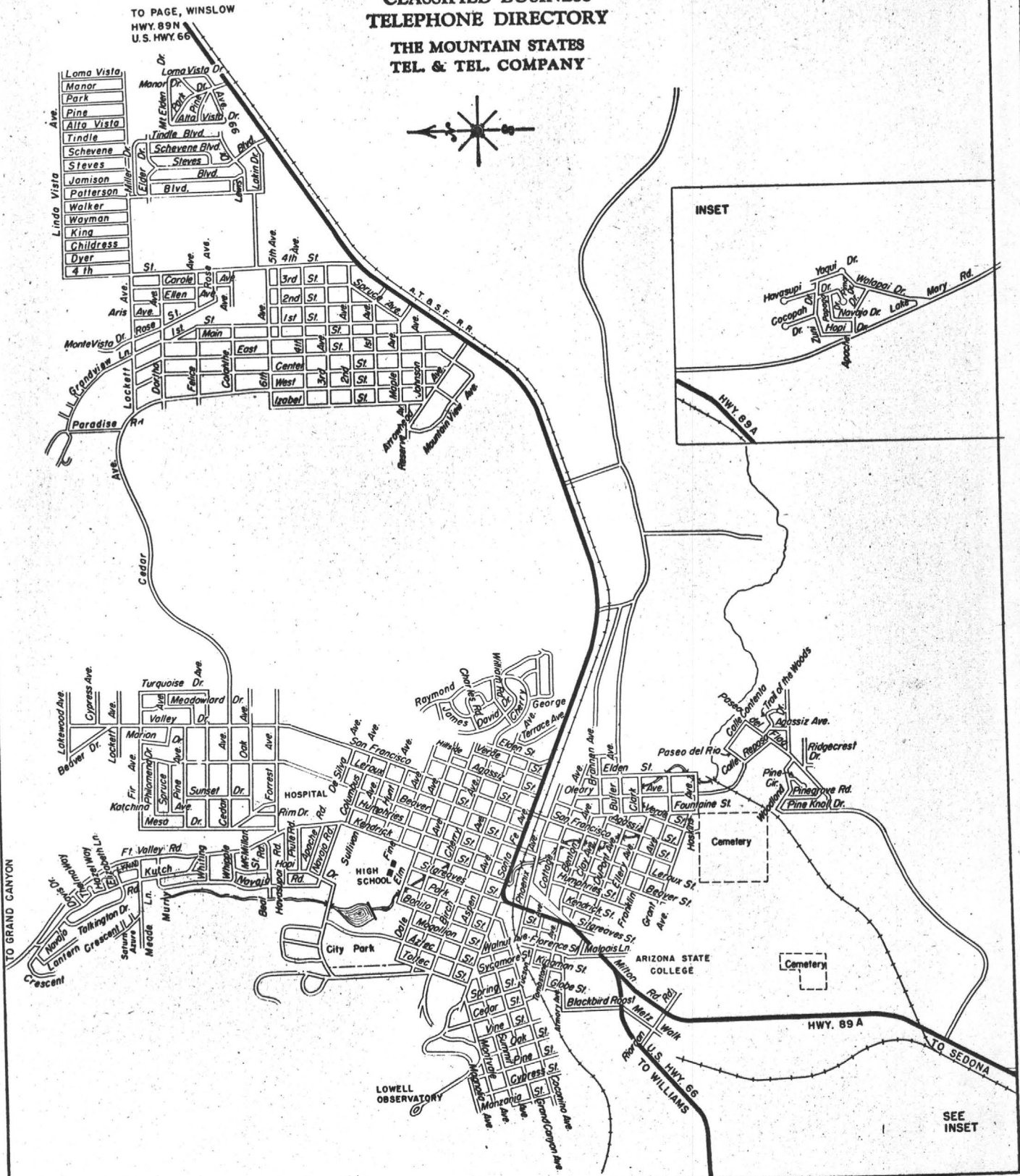
CLASSIFIED BUSINESS
TELEPHONE DIRECTORY
THE MOUNTAIN STATES
TEL. & TEL. COMPANY



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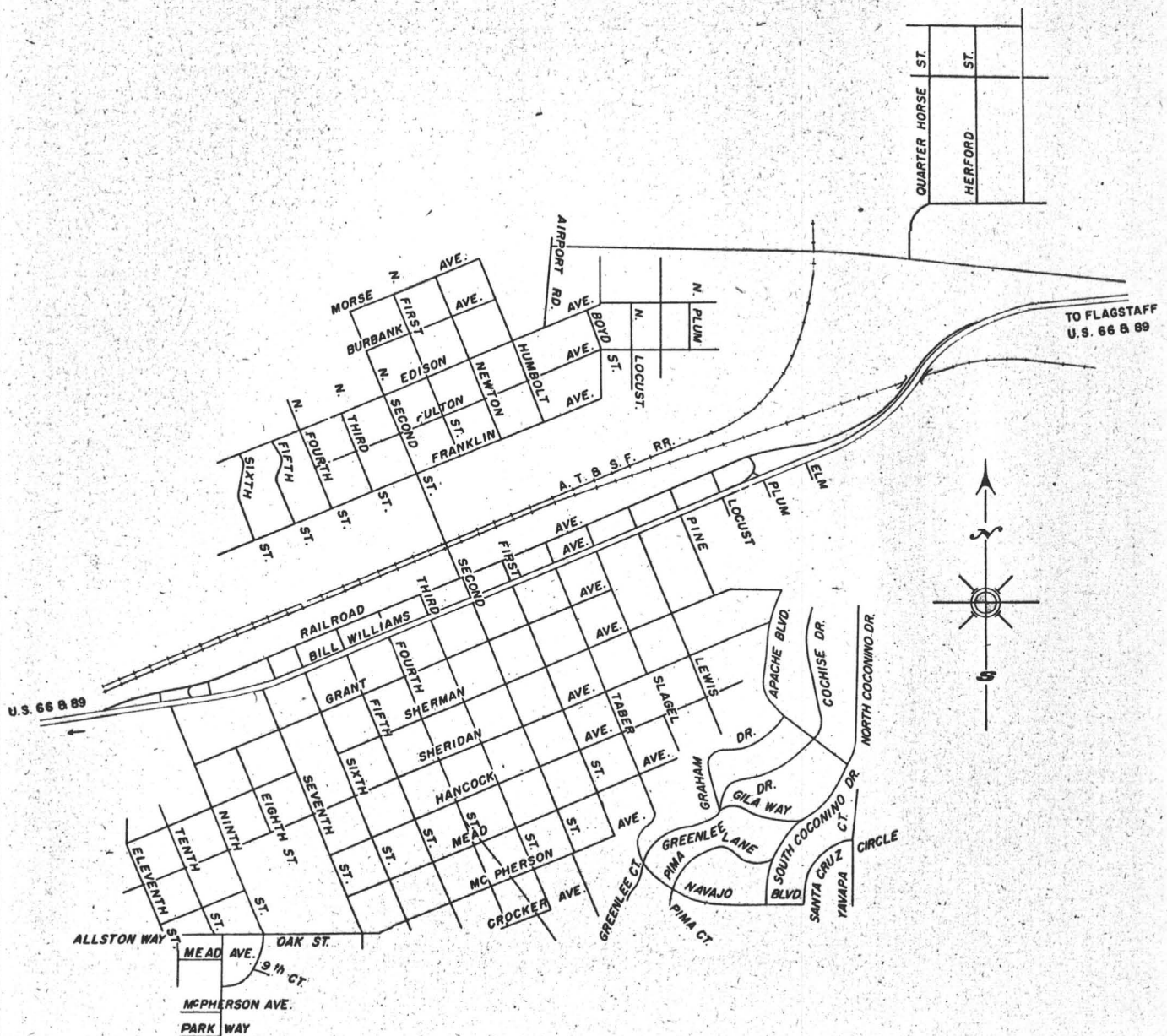


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MAP OF WILLIAMS ARIZONA

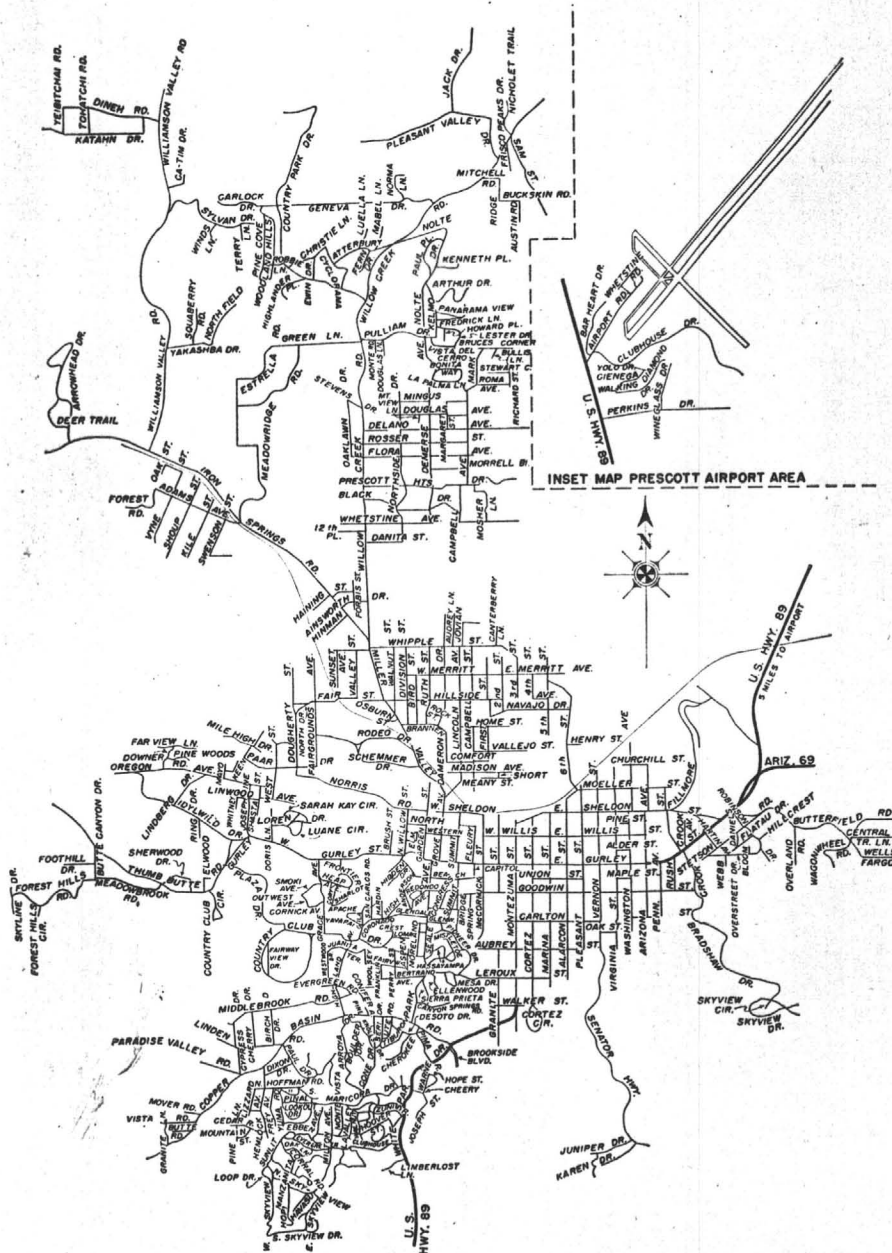
CLASSIFIED BUSINESS
TELEPHONE DIRECTORY

THE MOUNTAIN STATES
TEL. & TEL. COMPANY



Map of PRESCOTT Arizona

CLASSIFIED BUSINESS TELEPHONE DIRECTORY
THE MOUNTAIN STATES TEL. & TEL. COMPANY



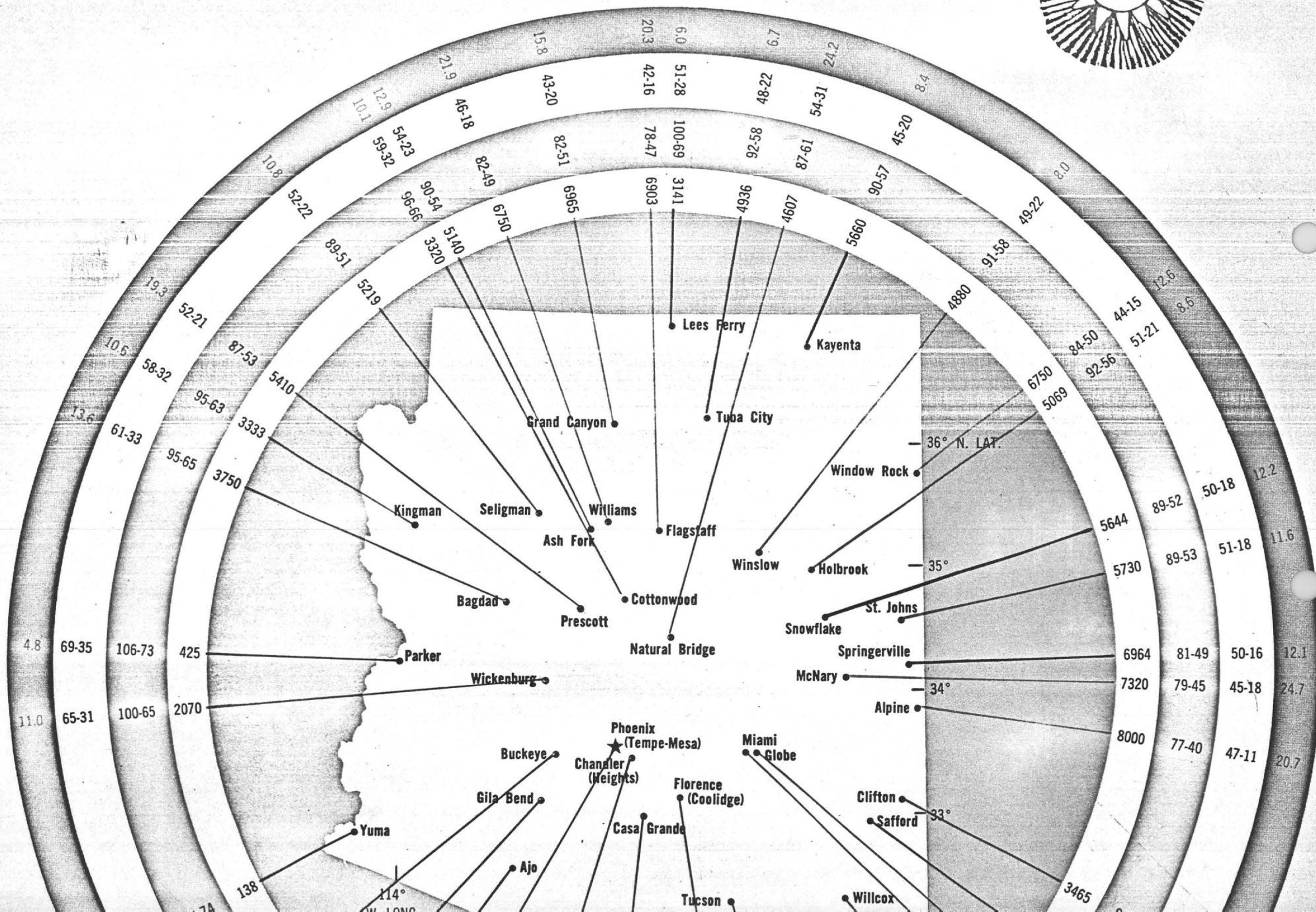
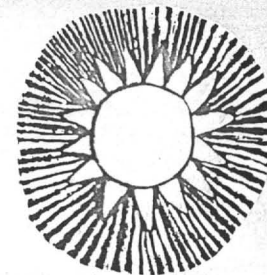
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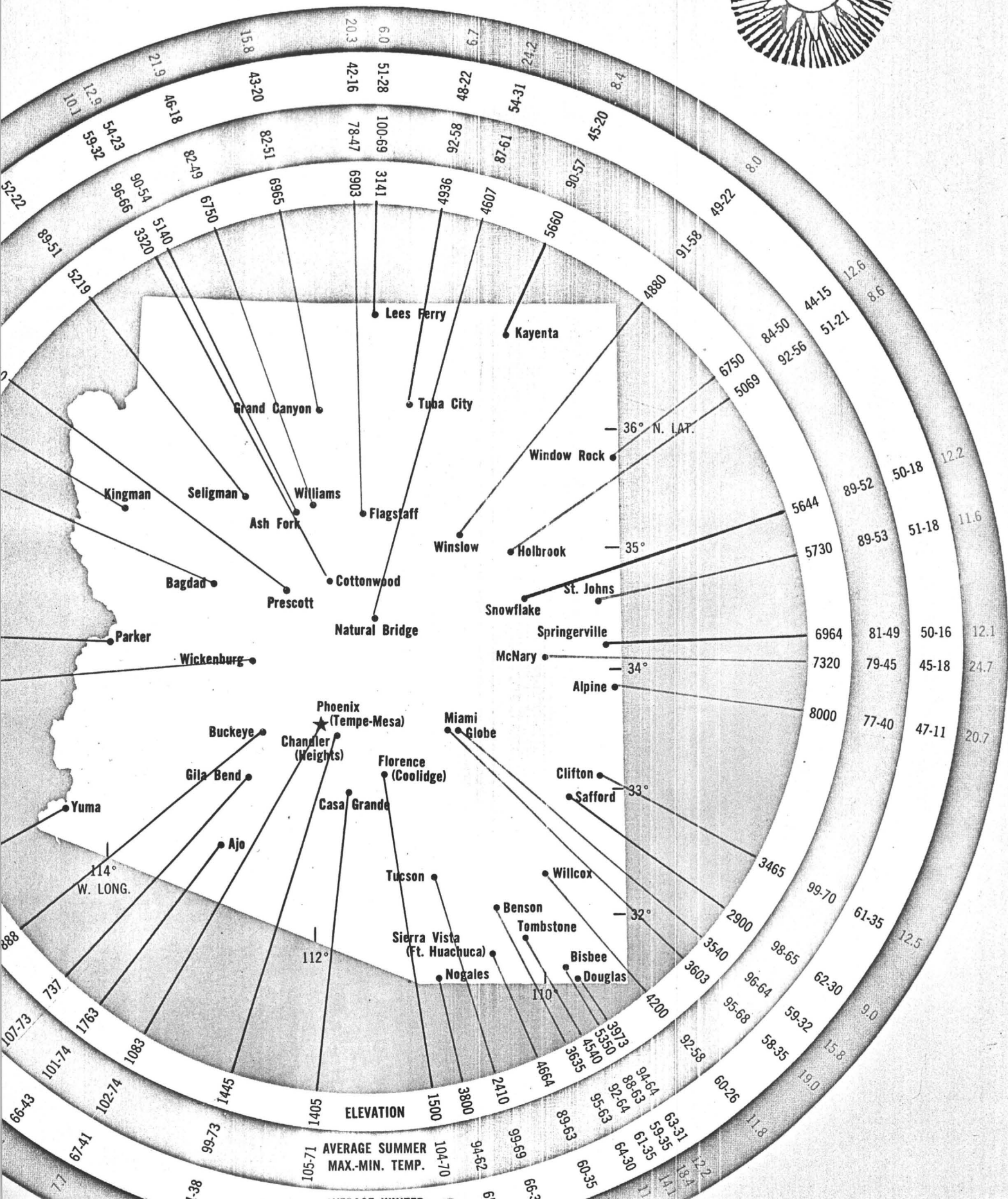
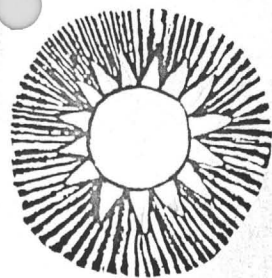
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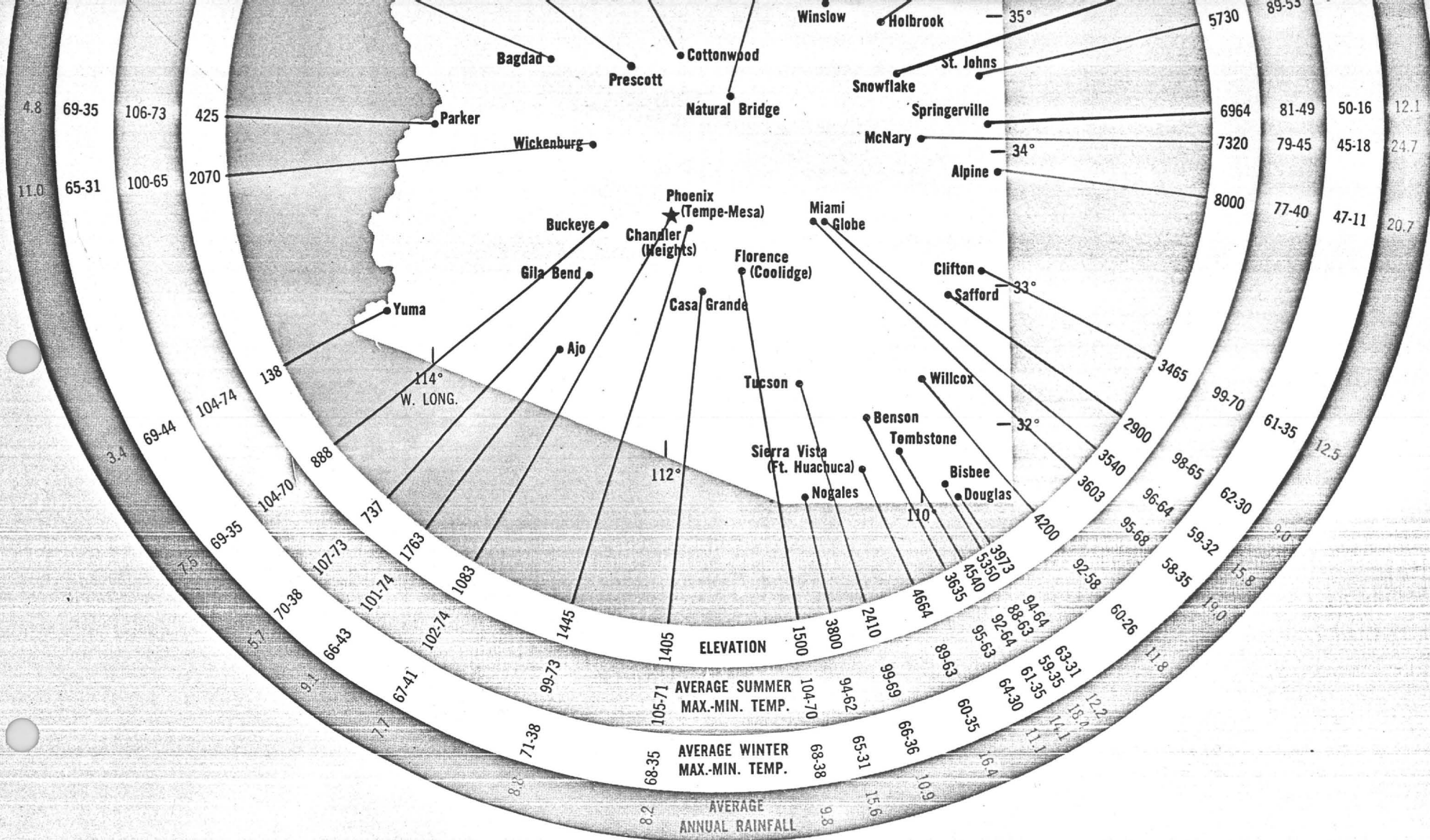


Climate for Arizona Cities



ate for Arizona Cities





Elevation: Feet above sea level.
 Rainfall: Inches.
 Summer Averages: June, July and August.
 Winter Averages: December, January and February.
 (For cities with 20 years or more of temperature records.)
 Basic Data: U.S. Dept. of Commerce, Weather Bureau.

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