Awake!

NOVEMBER 8, 1978

Spiritistic Religion

Why It Appeals To Many —Is It For You?

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November 8, 1978
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WHY THIS MAGAZINE IS PUBLISHED

"Awake!" is for the enlightenment of the entire family. It reports the news, tells about people in many lands, examines religion and science. But it does more. It probes beneath the surface and points to the real meaning behind current events, yet it stays politically neutral and does not exalt one race above another. It also shows how to cope with today's problems. Most importantly, "Awake!" builds confidence in the Creator's promise of a peaceful and secure new order within our generation.

The Bible translation used in "Awake!" is the modern-language "New World Translation of the Holy Scriptures," unless otherwise indicated.

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What Is Your View Of The Dead?

A WOMAN stands mourning at the grave of her husband, who was killed in an accident. It is November 2, known throughout Christendom as All Souls' Day. On this occasion millions of persons the world over visit cemeteries to decorate graves with flowers and garlands.

What is the reason for this? Many feel that their presence at the graves on that day can benefit the "souls" of dead loved ones. Roman Catholics believe that certain religious activities and prayers on All Souls' Day can bring relief for souls suffering in "purgatory." According to Catholic teaching, purgatory is a place of temporary punishment to purify the soul *before it* can gain admittance to heaven.

Though not advocating belief in purgatory, some Protestant churches also observe All Souls' Day. In fact, it is the last of three consecutive days that Christendom views as having a special relationship to the dead. The day before, November 1, is All Saints' Day, in honor of the souls of "saints," who are thought to have already made it to heaven. And the previous day, October 31, is called "Halloween," and it gets its name from being the eve of "All Hallows' [Saints] Day."

Halloween, too, bears a relationship to the dead. On the calendar of the ancient Celts October 31 was New Year's Eve. The Celts with their priests, the Druids, believed that on the eve of the new year souls of the dead roamed the earth. It was held that food, drink and sacrifices could appease these wandering souls. Too, Halloween featured bonfires to drive away evil spirits.

Concerning bonfires at that time of year, we read in *Curiosities of Popular Customs:* "Fires were also used at different times and places on All Saints' Night, which is the eve of All Souls' Day, and on All Souls' Day itself, the 2d of November. In these cases the fires were regarded as typical of immortality, and were thought to be efficacious, as an outward and visible sign at least, for lighting souls [that is, helping them get free] from purgatory."

What is your view of the dead? Do you believe that their souls are still alive in some invisible realm, experiencing pleasure or pain? Can the dead, if not appeased by certain religious acts or sacrifices, harm persons on earth? Can the living benefit the dead in any way?

You may be surprised to know that the Bible does *not* say that humans have a soul that separates from the body at death. Instead, we read that "man *came to be* a living soul." (Gen. 2:7) The soul is the entire person, not an invisible part of him. That means that when a person dies, the soul dies. (Lev. 23:30; Num. 31:19; Ezek. 18:4, 20; Luke 6:9) As for the condition of the dead, the Bible describes it as one of total unconsciousness, saying: "As for the dead, they are conscious of nothing at all."—Eccl. 9:5; Ps. 146:3, 4.

But though the dead are unconscious, there is a marvelous hope for them. The Word of God assures that "there is going to be a resurrection of both the righteous and the unrighteous." (Acts 24:15) Does that sound hard to believe? Actually, the Scriptures mention several resurrections that have already occurred. Let us consider three that were performed by Jesus Christ. Concerning the first of these, we read:

"He traveled to a city called Nain, and his disciples and a great crowd were traveling with him. As he got near the gate of the city, why, look! there was a dead man being carried out, the only-begotten son of his mother. Besides, she was a widow. A considerable crowd from the city was also with her. And when the Lord caught sight of her, he was moved with pity for her, and he said to her: 'Stop weeping.' With that he approached and touched the bier, and the bearers stood still, and he said: 'Young man, I say to you, Get up!' And the dead man sat up and started to speak, and he gave him to his mother. Now fear seized them all, and they began to glorify God, saying: 'A great prophet has been raised up among us,' and, 'God has turned his attention to his people.' And this news concerning him spread out into all Judea and all the surrounding country."—Luke 7:11-17.

The second recorded resurrection by Jesus concerned the daughter of Jairus, presiding officer of a synagogue in Galilee. As the girl was dying, Jairus implored Jesus to enter his house to cure her illness. (Luke 8:40-42) The Biblical account relates:

"While [Jesus] was yet speaking, a certain representative of the presiding officer of the synagogue came, saying: 'Your daughter has died; do not bother the teacher any longer.' On hearing this, Jesus answered him: 'Have no fear, only put forth faith, and she will be saved.' When he reached the house he did not let anyone go in with him except Peter and John and James and the girl's father and mother. But people were all weeping and beating themselves in grief for her. So he said: 'Stop weeping, for she did not die but is sleeping.' At this they began to laugh at him scornfully, because they knew she had died. But he took her by the hand and called, saying: 'Girl, get up!' And her spirit returned, and she rose instantly, and he ordered something to be given her to eat. Well, her parents were beside themselves."—Luke 8:49-56.

Though Jesus resurrected both of these individuals shortly after they died, this was not the case with his friend Lazarus of Bethany, near Jerusalem. Lazarus had been dead four days and laid away in a memorial tomb. The Gospel account by John relates:

"Jesus, after groaning again within himself, came to the memorial tomb. It was, in fact, a cave, and a stone was lying against it. Jesus said: 'Take the stone away.' Martha, the sister of the deceased, said to him: 'Lord, by now he must smell, for it is four days.' Jesus said to her: 'Did I not tell you that if you would believe you would see the glory of God?' Therefore they took the stone away. Now Jesus raised his eyes heavenward and said: 'Father, I thank you that you have heard me. True, I knew that you always hear me; but on account of the crowd standing around I spoke, in order that they might believe that you sent me forth.' And when he had said these things, he cried out with a loud voice: 'Lazarus, come on out!' The man that had been dead came out with his feet and hands bound with wrappings, and his countenance was bound about with a cloth. Jesus said to them: 'Loose him and let him go.'"—John 11:38-44.

In Future Issues

- *Security—The Elusive Goal*
- *Merchants on Wheels*
- *My Patient Search Rewarded*

Scripturally speaking, therefore, you should view the dead as simply unconscious. They experience neither joy nor hardship. However, the resurrections that Jesus performed when on earth give solid basis for faith in his encouraging words: "This is the will of him that sent me, that I should lose nothing out of all that he has given me but that I should resurrect it at the last day. For this is the will of my Father, that everyone that beholds the Son and exercises faith in him should have everlasting life, and I will resurrect him at the last day."—John 6:39, 40.

Spiritistic Religion

Why It Appeals To Many —Is It For You?

By "Awake!" correspondent in Liberia

THE massive cathedral stands dark and empty, but from a small church on a back street sounds of singing, rhythmic handclapping, tambourines and cries of "Praise the Lord!" pierce the night air. Intermittently the exciting tone of frenzied preaching rises above the din. Suddenly the arm-waving ecstatic leader begins spilling forth words in an unknown tongue. As someone responds, the audience senses that contact has been made with the supernatural, and there is expectancy of miraculous healings and prophesyings.

With variations, this scene in an African "healing" church is common in many lands. Some view it as a widespread charismatic movement manifesting man's heightened spiritual need. Conventional religion of mere rote and ritual has been abandoned by great numbers of people in favor of supernaturalism and "spiritual reality."

Will such vivid emotional experiences satisfy your spiritual need, or will they subject you to dangerous influences? The distress of our times impels many to seek a positive response from God. Whereas some seek out "healing" churches, others look for this response by contacting spirit personalities through mediums, as did King Saul of old.—1 Sam. 28:4-8.

But spiritistic religion is deceptive and dangerous, because it is getting in touch, not with the true God, but with malevolent spirit creatures ruled by the one "who is misleading the entire inhabited earth," Satan the Devil. (Rev. 12:9) It is God-condemned spiritism. (Deut. 18:10-12) And do not forget that unchristian heathen of ancient times also received the "spirit," enabling them to heal, speak in unknown tongues, and "prophesy"! Churches that pretend to approach God by stirring up audiences to states of ecstasy or hysteria are imitating the heathen. Consider how they go about it.

Induced Ecstasy

One way of inducing ecstasy is by means of drugs, as explained by Tylor's *Religion in Primitive Culture:*

> "By smoking tobacco, the sorcerers of Brazilian tribes raised themselves to ecstasy in their convulsive orgies, and saw spirits . . . North American Indians held intoxication by tobacco to be supernatural ecstasy, and the dreams of men in this state to be inspired."—Vol. 2, p. 503.

Because of its use in spiritistic religion's approach to the demons, tobacco was referred to as the "holy herb." Comparing drug-induced ecstasy with what is carried on in churches, Tylor points out that fanatical preachers at "revivals" often produce the "very fits and swoons to which for untold ages savage tribes have given religious import."

Frenzy can be built up at church services so that some come into a condition of hysteria, with eyeballs turned up and hands clenched with thumbs inverted, followed by muscle spasms, struggles and a throwing of themselves about. Does such a condition parallel the first-century Pentecostal outpouring of holy spirit?

By no means! (Acts 2:1-11) The operation of God's spirit produces, not uncontrolled hysteria, but just the opposite, the fruits of mildness and self-control, according to the Bible, at Galatians 5:22, 23. In a state of hysteria, persons lose self-control and are known to have been "haunted by visions, their fancies conjuring up spirits whose names they shrieked out."

It is clear that frenzied and ecstatic religious feelings can easily get beyond control as the limitations of the flesh are set aside. Little wonder that Hastings' *Encyclopædia of Religion and Ethics* acknowledges the responsibility of Christianity to keep "ecstasy in the background as a danger to the mind and to the will."

Fixations

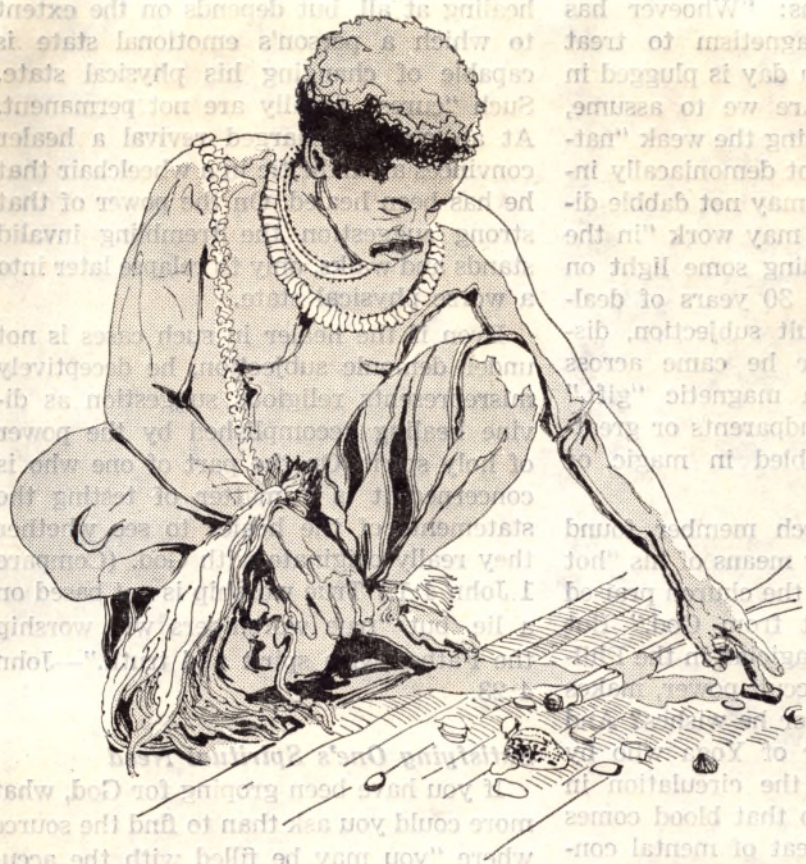
The Bible counsels Christians to "persevere in prayer" and to keep their minds "fixed on the things above." (Rom. 12:12; Col. 3:2) This does not mean, however, that one should concentrate the mind on a single idea or object for an extended period of time in expectation of some emotional experience. In some churches prospective converts kneel for hours at a "mourners' bench" praying for "religion." But herein lies great danger, for fixing one's mind on one thing, accompanied by repetitious prayers, is the very practice that Jesus condemned. (Matt. 6:7) It can result in a state of trance or self-induced hypnosis. In such a condition, a person may receive mental suggestions, or the emotional response may be so vivid that he feels that he has been touched by God. This approach parallels the posture-concentration exercises of Yoga, a form of spiritism producing extrasensory impressions.

Whereas the Bible, at Philippians 4:6, 7, promises that God will 'guard mental powers' in response to prayer, those who seek "religion" by fasting and fixations find that they must blank out their minds and throw off the restraints of their mental powers of reasoning. "Your mind is too rational. You don't get it until you let go and let the Holy Ghost get through," admitted Marcus Bach in his book *The Day I Spoke in Tongues—the Inner Ecstasy.*

This 'letting go' was once recommended in these words:

> "You must be able to subdue your mind, quiet it. . . . Allow your mind to wander or just to blank out. . . . Mistakes can be avoided by listening carefully each day at meditation for the inner voice . . . and the help from higher planes."

Is this counsel from the Bible? Not at all. Rather, it is what a demonic "voice" told a lady who used a Ouija board. This



incident demonstrates that clearing the mind through improper concentration in order to hear voices or to be touched emotionally is an invitation to the demons to rush in. It is just such a "swept clean" mind, not refilled with spiritually wholesome thoughts, that Jesus said would be occupied by demons.—Luke 11:24-26.

Spiritistic Healing

Employing principles common to witchcraft, a psychometric healer obtains some hair, a piece of fingernail, or even some saliva on a piece of paper to use as a contact bridge for diagnosis and healing influence. Such practices, as well as the healings effected by the psychic powers of Yoga and the spiritistic healing movements like that of Harry Edwards in England, led one investigator to comment: "Magic healing is the commonest form one meets today."

In Africa a magical healer accomplishes his work through fetishes or amulets. Objects dedicated to Satan, such as stones, are used in some areas. Now, if this principle of magic is adopted by "Christian" churches, can we say that the power behind it now comes from God and not from Satan?

Actually, various charms are used even in some churches of Christendom in connection with healing. Says Hastings' *Encyclopædia of Religion and Ethics:* "In Western Christianity the Apostles' Creed holds a position parallel with the Lord's Prayer. It is used for healing, especially in exorcism." Prayers, religious formulas and Bible texts have been converted into magic spells, exactly as is done in pagan religions. Christian Science healers use Bible texts in conjunction with autosuggestion. The sign of the cross still is superstitiously regarded by many as the "surest defense against demons, and the remedy for all diseases," says Dr. Kurt Koch in his book *Demonology Past and Present.*

Magnetic and "Hot Hand" Healers

Then there are magnetic healers with strong powers who claim to restore health simply by making stroking movements with their hands. However, a magnetic

healer himself explains: "Whoever has powers of healing magnetism to treat more than two people a day is plugged in to the underworld." Are we to assume, then, that those possessing the weak "natural" magnetism are not demoniacally influenced? Such healers may not dabble directly in spiritism and may work "in the name of Jesus." Shedding some light on this, Dr. Koch, during 30 years of dealing with cases of occult subjection, discovered that whenever he came across a person possessing a magnetic "gift," either his parents, grandparents or great-grandparents had dabbled in magic or spiritism!

In Germany a church member found that he could "heal" by means of his "hot hand." The minister of the church praised this ability as a "gift from God." But what about a certain magician in the Philippines who, through occult power, makes his hand "hot" whenever he wishes? And there is also a master of Yoga who by autosuggestion causes the circulation in his hand to increase so that blood comes through the pores, a feat of mental concentration causing a change to take place in his physical body. Would the minister also praise these latter spiritistic phenomena as 'gifts from God'? Such a religious leader offers little protection against dangerous spiritistic religion.

Healing by Suggestion

Many faith healers employ the principle of suggestion. This is not really divine healing at all, but depends on the extent to which a person's emotional state is capable of changing his physical state. Such "cures" usually are not permanent. At an emotion-charged revival a healer convinces an arthritic in a wheelchair that he has been healed. On the power of that strong suggestion the trembling invalid stands and walks, only to relapse later into a worse physical state.

Even if the healer in such cases is not under demonic subjection, he deceptively misrepresents religious suggestion as divine healing accomplished by the power of holy spirit. On the part of one who is concerned it is a matter of testing the statements of the healer to see whether they really originate with God. (Compare 1 John 4:1.) True worship is not based on a lie, but "true worshipers will worship the Father with spirit and truth."—John 4:23.

Satisfying One's Spiritual Need

If you have been groping for God, what more could you ask than to find the source where "you may be filled with the accurate knowledge of [God's] will in all wisdom and spiritual comprehension"? Then your spiritual need will be fully satisfied. This requires that one conscious of his spiritual need put forth effort in a sincere, open-minded search of the Bible itself. If you do this, you will come to know the truth, which Jesus said will "set you free." —Col. 1:9; John 8:32; Matt. 5:3.

Listening to Gossip

When next tempted to give ear to the tidbits of gossip that someone has to relate, remember that a person who delights to gossip to you about the faults of others probably will gossip to others about your faults. How true the words of Solomon: "He who covers a transgression seeks love, but he who repeats a matter separates intimate friends."—Prov. 17:9, "New American Standard Bible."

Plan Well For Your Travel Abroad

By "Awake!" correspondent in the Federal Republic of Germany

"HELLO. Your passport, please. Would you open your luggage, please? Do you have anything to declare?"

If you have ever been a part of that huge friendly army of people that annually floods across borders in cars, buses, trains and, in ever-increasing numbers, in planes, then these requests and questions certainly will be nothing new to you.

The renowned traveler Marco Polo as well as Alexander von Humboldt, a noted German naturalist and traveler of the 18th and 19th centuries, would turn green with envy could they see the distances tourists travel nowadays and how quickly they flit from continent to continent by jet airplanes.

Travel-Happy

In recent years German vacationers have greatly swelled the ranks of international travelers. The favorable exchange rate of the German mark has encouraged this development. Each year hundreds of millions of D-marks flow into tourism's coffers. This business of "faraway places" is booming. Ever more Europeans are spending their supposedly "most precious weeks of the year" in exotic lands and on southern beaches. Nearly 60 percent of all 1976 vacationers from the Federal Republic of Germany traveled abroad, the majority of them to the sunshine countries of the Mediterranean. In the same year they spent approximately 22,540,000,000 D-marks.

But relaxation is not the only reason to travel abroad. Several thousand of Jehovah's Witnesses from Germany and other German-speaking countries in Europe will soon be traveling abroad for another reason, namely, to attend international assemblies that are being held in the winter of 1978/79 in the southern hemisphere.

Prepare Well

Not every trip proves to be successful, nor does every expectation go fulfilled. This is especially true if proper preparation for the trip is not made. A trip to a foreign country can be an unforgettable experience. But you can also squander precious time and hard-earned money if

you are careless about preparing properly for your "trip into adventure."

A travel agency can assist you, but it cannot do everything. For example, it can provide you with a guidebook, but it cannot provide you with a knowledge of the language. Nor can it make you adept in handling pesetas, lire, escudos, crowns, francs, pounds or dollars. Many difficulties can be avoided by your taking time to acquaint yourself with the land of your dreams, with its inhabitants and their customs.

Climatic Difference and Time Changes

Everyone who purposes to visit a country with an unfamiliar climate must realize that his general condition, his capacity for work and also his mood will be influenced. Nor may one overlook the effect of time changes on the body in long-distance flying.

The numerous processes of the human body are patterned on a day-night rhythm dependent on an inner biological clock. It should not be difficult to understand that changing one's location quickly in either direction, west or east, tends to disturb this rhythm. On an intercontinental flight from Frankfurt to New York there is normally a time difference of six hours, and on a jet trip to Sydney, Australia, the difference is nine hours. How confusing when on arrival your already strenuous day of travel suddenly becomes six, eight or even more hours longer. Since the human body can only compensate (some say) for a two-hour difference a day, you can easily figure out how long it will take your inner clock to become properly regulated again. After your return home the entire procedure will take place again in reverse.

If you are dependent upon certain medication (for example, insulin or blood-thinning medicines) you must give particular attention to the conditioning factors of time difference. Discuss your travel plans with your doctor. He will be able to give you good advice. Other information can be obtained from the book entitled "Ärztlicher Ratgeber für Flugreisende" (Medical Counselor for Plane Passengers [in German only]) by Dr. H. Baark, who discusses these problems thoroughly in a chapter called "The Proper Time for Taking Medicines in Intercontinental Flight."

Health Takes Precedence

You may feel "fit as a fiddle" and have no thought of getting sick on your trip. But since you can never rule out the possibility, take reasonable precautions to keep the risk at a minimum. An upset stomach or digestive system can certainly dampen your joy while you are traveling.

An article by Dr. P. Wright, "Traveling in Good Health," appearing in the *Reader's Digest,* issue of June 1968, had the following to say about this complex subject: "99 percent of the cases of diarrhea are caused by water or food contaminated by bacteria, protozoa or viruses. Most hotels will serve bottled water on request. . . . Avoid putting ice in your drinks. . . . Also, use only safe water for brushing your teeth."

Don't take it for granted that health regulations in all places will meet up to the standards of your own country. In the Mediterranean area, the Near East, in tropical and subtropical countries, it is imperative to exercise caution when enjoying the customary dishes of the country. Don't be too generous in "surprising" your digestive system. Avoid salads and raw vegetables, as well as raw meat, if possible. Forgo tasty treats made from milk or cream products if there is any doubt that they have been stored or cooled properly.

Tips for Hot Countries

Remember that when visiting hot countries you can do yourself much harm by

being careless. For example, if you leave a European winter in January or February and arrive in the midst of a South American summer, be especially careful. Otherwise the change may be so sudden that, paradoxical as it may sound, your stay in the tropics may well begin with a bad case of the sniffles. Enjoy the sun in small doses, at least until your body has adjusted. If you perspire a great deal, do not neglect to eat enough salt with your meals. Also remember the increased risk of skin infection in hot countries.

In tropical lands your clothing should be of absorbent materials. This should especially be true of underwear. Also shirts, blouses or dresses should not hinder perspiration. Cottons and linens are the best. If possible, change underwear twice a day and make sure that your other clothing is comfortable, lightweight and easily washable. If at all possible wear shoes with leather soles and do not forget to take along a wide-brimmed hat.

Get Adjusted for Your Trip

Along with other essential things in planning a trip, do not forget mental preparation. Make sure your "luggage" contains a healthy amount of balance and anticipation of unforeseen occurrences. Don't let your joy be dampened by unexpected incidents like, for example, a delay or a security check. Don't get irritated when things do not go as planned. "A person travels, not to get where he is going, but just to travel," is a sensible German adage. Oftentimes it is just those very "mishaps" that you have during vacation that turn out to be the nicest experiences! You talk about them for years thereafter and never tire of laughing at them over and over again.

The *Hamburger Abendblatt* of April 15, 1976, gave this good advice: "Germans [and this applies to all travelers] when on business or pleasure trips should show more understanding for the customs and habits of the people in other countries." Certainly you will want to do that. Always be friendly and polite. Adjust to the way of thinking of the native population, be carefully observant, listen attentively and, most assuredly, you will be richly rewarded. Spiritual blessings will also come your way if you attend one or more of the many international assemblies of Jehovah's Witnesses.

A hectic chase of aimless sight-seeing will not be enjoyable. A well-planned trip, on the other hand, will provide you with much pleasure, and afterward you will be able to look back on a really successful trip abroad.

Make your trip abroad a success by:

Checking your passport to see that it is up-to-date. (If visas are necessary, observe carefully all regulations and deadlines.)

Observing carefully the customs regulations (especially the limit on duty-free wares and the various import and export restrictions).

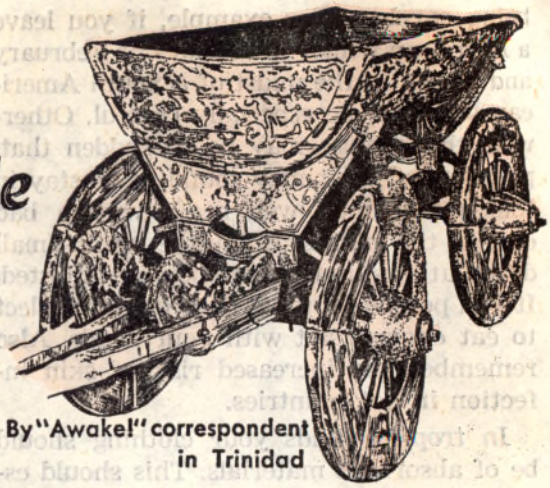
Taking into consideration foreign currency laws (for example, limits or prohibitions on bringing money into the country).

Observing for your own benefit health regulations and advice (smallpox, cholera and yellow-fever vaccinations and preventive medicine against malaria and typhoid).

Taking out necessary travel insurance (health insurance in a foreign country, luggage insurance).

Placing, inside all your luggage, a slip of paper with your name and home address written plainly on it.

A Soft Ride—Long Sought, Now Possible



By "Awake!" correspondent in Trinidad

SEVERAL thousand years ago, in the Mesopotamian valley, wheeled carts were used to transport goods and people. The well-made solid wooden wheels consisted of thick planks fastened together, and they were thicker at the hub than at the rim. Some even had metal rims or were studded with copper nails. Can you imagine the kind of ride you would have had on such a cart? Every stone or rough spot a wheel would pass over would be transferred to the passenger as a jarring jolt. This was a far cry from a soft ride.

About the middle of the second millennium B.C.E., military men decided that wheels could be used to an advantage in battle. Hence, crude and, later, very effective chariots appeared on the field of battle in areas where there were plains on which to maneuver. These chariot wheels soon were very well constructed. They usually had spokes—four, six or eight—and were complete with rims of metal or leather, or were nail studded. As a chariot was generally very light, a pair of galloping horses could get its riders over the ground at a fairly rapid rate. In such a chariot charge, every bit of uneven ground must have been bone-shaking.

Passenger Transportation Grows

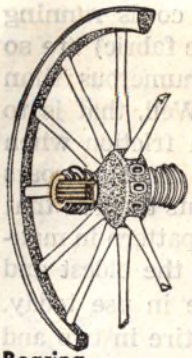
Aside from being used to some extent for passenger transportation, the military chariot remained popular for centuries. In fact, it was during the days of the Roman Empire that its use as a military weapon lost favor, and it became restricted largely to the circus and races. During this time, wheeled vehicles for passenger service became more and more plentiful. The fine road system of the empire had much to do with this.

An early form of the modern type of wagon appeared in Denmark. The remains of one of these vehicles, known as the Dejbjerg wagon, has been found. Even crude wooden roller bearings were used in the hubs of this wagon.

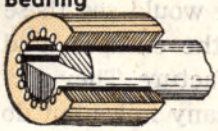
Other peoples also made their contribution toward improving the wheel. To produce a better wheel, the Scandinavians used heat to bend the wooden rims or fellies. The Chinese seem to have been first in making a dished wheel. Hungary contributed toward the development of the coach, which made its appearance during the latter part of the Middle Ages. Nevertheless, a soft, comfortable ride still was a long way off.

Modern Improvement Comes

The 19th century, however, saw many developments that led to a softer, more comfortable ride. Some experimenting had been done with suspending the body of a vehicle by chains or by leather belts to take some of the jolting out of the ride.



Bearing



At the beginning of the century, steel springs were invented and applied to the various types of wheeled wagons and carriages of the day. A little later came the invention of macadam roads, which went a long way in making possible a more comfortable ride. But the really big breakthrough came in 1839, when Charles Goodyear accidentally, by the introduction of sulphur, changed raw rubber into an elastic material. This process, known as vulcanization, opened the way for putting a tire of rubber on the rims of wheels, making possible a softer and quieter ride.

By 1845, the Englishman Robert William Thomson patented a pneumatic tire to be used on the English brougham. It had an outer cover and a rubber inner tube. A set of these "Aerial Wheels" would last about 1,200 miles (1,900 kilometers) on a brougham. The public, however, was not ready for this tire and preferred to get along with solid-rubber tires. This situation continued on for some 40 years, until John Boyd Dunlop invented a pneumatic bicycle tire in 1888-89.

It was about this time that the automobile began to appear. A pneumatic tire was just what was needed to suit the growing development and popularity of this "horseless carriage." Early tires were like bicycle tires, being just a single tube of canvas coated inside and out with rubber. They were not very durable, as the square-woven fabric caused a lot of friction and rapid deterioration. Clincher tires appeared in 1892 and were used for many years on some autos. These carried a high pressure. About 1900 this pressure usually was about 65 pounds (29 kilograms). The tires were small and so did not contribute much toward a soft ride. Nor did they last long, only about 2,000 miles (3,200 kilometers) at first. By 1920, this had increased to about 10,000 miles (16,000 kilometers). Then came the steel-spoked and disk wheels that were smaller in diameter and had tires with a bigger cross section and much less pressure. The "balloon" tires from the early 1930's onward did last longer and were much more comfortable. By 1957 a tire could last as long as 35,000 miles (56,000 kilometers) under favorable conditions.

How Tires Are Made

Have you ever wondered how a modern tire is made? My opportunity to find out came when the manager of the Dunlop factory in southern Trinidad arranged for me to tour their plant. A parting suggestion over the telephone was: "Be sure to wear some old clothes."

Entering the plant with my guide, I at once realized why the old clothes were suggested. Instead of there being a shining array of machinery, everything had a dingy, black appearance. Why was this? Well, a principal component of a tire is carbon black—and is it black! It is a fine powder that penetrates everything that is not closed off.

As I passed by large piles of various tire components, it appeared that I was in a large chemistry shop instead of a tire factory. The guide explained that many different chemicals are used in making a modern tire and that these chemicals are varied in amount and kind to produce the type of tire suited to perform well under the road conditions that a driver is likely to encounter. Some tires use much natural rubber. This is because

natural rubber dissipates heat better than do synthetics and in severe cold also stands up better than do synthetics. However, since its introduction in the 1930's by the Germans and in the United States by DuPont, synthetic rubber has been used in ever-increasing amounts. For this plant, sulphur comes from England, carbon black from Venezuela and natural rubber from Malaysia, while synthetic rubber comes from the Netherlands. Rayon and nylon cord may come from Japan, Germany or England. So, making tires here is really an international project.

The first step in making a tire is to mix all the polymers and other compounds or chemicals in a huge mixing machine called a Banbury mixer. A sample of the mix is tested in the laboratory to determine whether it has the characteristics desired for the particular type of tire being manufactured. A rubber can be produced that will grip very well on a wet road but may not do well on a dry road. It may have high rolling resistance and not wear well. So a compromise must be made. Most roads are wet some of the time and dry at other times. The mix must result in a tire that gives reasonably good service on a variety of road surfaces. Many different mixes are produced by this machine. Now the material is fed through an extruder to make the tread and sidewalls of the tire. Again what makes the tread may be different in composition from the sidewall in order to meet the different situations encountered as the tire revolves and also to withstand sun and weather conditions.

Over there is a complicated piece of machinery. What does it do? Fabric is being fed into the machine to produce the plies that make up the carcass of the tire. Rayon cords are used in many tires, as are cords made of nylon and, more recently, polyester. Why is it that the cords running lengthwise (the warp of the fabric) are so much thicker and more numerous than those running crosswise? Well, that is to prevent heat buildup from friction when the tire is revolving. This machine coats the plies with rubber and cuts them so that they will form a crisscross pattern in making up the casing. This is the oldest and most common type of tire in use today. If you were to cut such a tire in two and strip back its tread, you would see these angled plies. These are the cheapest and the easiest tires to manufacture. They perform well and last for many miles but do not do as well as a more recent type that has become very popular in many countries.

A short distance away a workman is making cross-ply tires. The plies are put on

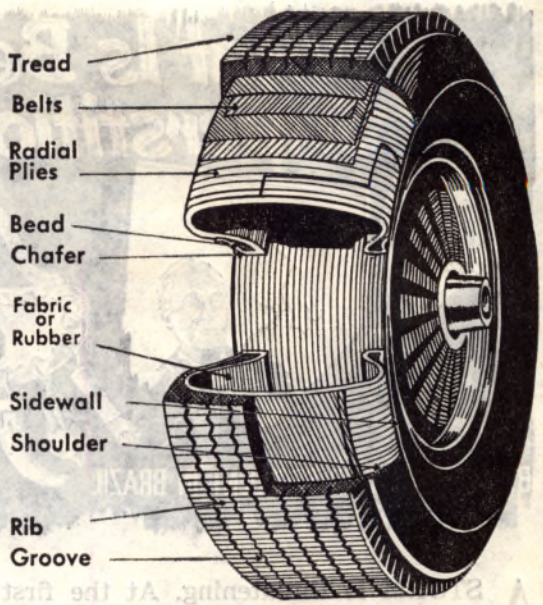
Bias-ply body Radial-ply body

layer by layer, with rubber solution being added between each ply. Why only two plies on passenger-car tires when we used to have four or six? The more plies, the more friction and the quicker the tire casing deteriorates. Besides, modern cords are much stronger than the old cotton cords of former years. The cooler a tire runs, the longer it lasts. The plies are wrapped around the wire hoops called the bead, and some chafer strips are added

to give more strength where the tire fits the rim of the wheel. Now the tread is bonded to the casing, and the tire is complete. Complete? Why, it looks like a little barrel, anything but a tire! Oh, yes, it must go into a mold to be shaped and cured.

Heat and pressure complete the making of the tire. After a curing time in the huge molds, out comes a brand-new tire. Notice the tread. There are many designs for various purposes. In the early 1930's, a tread of round knobs appeared, to be used for driving in the rurals off the highways. To a large degree, it did away with the need for chains. Later came treads with large lugs (to be used in snow), and then tungsten studs were inserted into the tread to make driving on the ice safer. In Trinidad we have neither ice nor snow, and so treads are smoother and give a softer, more silent ride. There are large grooves running around the tire, with many small slits or sipes running crosswise. These are to drain off water and give the tire better traction and cornering ability. You will do well to choose a tread to suit your driving needs, perhaps a winter and a summer set of tires in some climates. Remember, heavy treads make noise on a highway or an expressway and do not stand up well at continuous high speed.

Now, we see another type of tire being made, and the demand for it is increasing. It is the radial tire, so named because its plies run at right angles to the circumference of the tire. The radial tire is very flexible in the sidewalls but rigid in the tread due to its casing and a belt of several cross-plies underneath the tread. Because of this characteristic, it is a safer tire under most driving conditions, and it usually outlasts the cross-ply by many thousands of miles. The radial tire is more difficult to manufacture and so is more



expensive. Nevertheless, there is an increasing demand for it.

A third type of tire is the belted cross-ply that is not made in this plant. A hybrid between the cross-ply and the radial, it is popular in the United States and other countries. The belted Polyglas tire has a casing of polyester cords and two belts of fiber glass. And, of course, there are the popular steel-belted tires.

After manufacture, tires are checked for roundness, balance and other requirements. Most tires with brand names will give good service if used for the purpose for which they were made.

As is evident from this tour, man has come a long way in making it possible for all of us to enjoy a soft ride. But whether it will be a safe ride largely depends on the drivers. Hence, for a safe ride, a person should buy tires to suit his driving needs and should drive to suit the tires he buys. Additionally, excessive speed, drugs, drunkenness and carelessness must be avoided.

What Is Behind Those Superstitions?

BY "AWAKE!" CORRESPONDENT IN BRAZIL

A STORM is threatening. At the first flash of lightning a woman rises hastily and covers all mirrors in the house. An elegantly dressed society woman wears a gold chain with a little wooden *figa,* or amulet, around her neck. A university student surreptitiously slips a rabbit's paw into his pocket at exam time. While a hotel guest in the United States may refuse accommodations on the 13th floor, many persons in Brazil consider 13 to be a "lucky" number. Why?

All these people have one thing in common—superstition. But what really is superstition? It has been defined as an "unreasonable religious belief or practice." One writer denounced superstition as being based on "foolishness, futility" and said that it is "almost always ridiculous." (*The Natural History of Nonsense* by Bergen Evans) Many superstitions are widespread, such as associating good luck with a horseshoe. Others are peculiar to certain countries or regions.

Statues, "Holy" Water and the "Figa"

The following random selection gives some examples of currently held superstitions:

- A statue of an elephant with its trunk pointing upward and tail pointing toward the door will bring money into a home.
- Mirrors cause paralysis of the face if looked into after one has been eating. If a mirror breaks, it means death of a family member.
- A glass of "holy" water placed behind the door wards off any evil spirits that may wish to enter a room.
- One should not sleep while exposed to moonlight, as it weakens eyesight and causes insanity.

Perhaps the most common superstition in Brazil involves use of the *figa,* an amulet shaped like a fist with the thumb between the index and middle fingers. According to the publication *Vocabulario de Crendices Amazonicas* by Osvaldo Orico, this amulet represents sexual intercourse. Nevertheless, it is used to guard against the "evil eye," sterility and other forms of "bad luck." It can be seen in necklaces and bracelets, on car bumpers, behind doors, or used as ashtrays and lampstands and as a decoration in humble as well as wealthy homes.

Do you know of any other such practices or beliefs? Likely you do, for superstitions are very numerous in all parts of

the earth. One director of a study center found more than 400,000 examples and expects to come up with at least that many more.

Birth and the Menstrual Cycle

Some customs and "do-nots" have been shown by modern science to be fallacies. For example:

- A woman who has just become a mother should refrain from washing her hair for 30 days or more after giving birth; she should refrain from taking a bath for 40 days if the baby is a girl, 41 if a boy.
- A new mother may not eat eggs, pepper, acid fruits, or even rice.
- She must avoid going out at night, as the evening dew may cause insanity.

These are but a few of the taboos that well-meaning friends and relatives urge new mothers to heed.

In some parts of Brazil, birth is surrounded by superstitious rites and practices known as *simpatias*. Some examples are:

- If a woman begins labor, she is told to make an infusion. This is done by boiling in water two railway signal flags, a red one and a green one, and then drinking the water. The red flag is believed to be good for stopping hemorrhage, and the green one supposedly shortens labor.
- Keeping three twigs of rue root under a new baby's pillow will stave off harm from the evil eye as well as disease.
- Putting red wool on the baby's forehead can cure its hiccups.
- When en route to the location where birth will take place, do not tie ribbons to clothes that the baby will wear, for this will delay birth.

The menstrual cycle is another thing that has given rise to many superstitions. Some believe that a woman should not wash her hair during menstruation; and certain women fear to take a bath at this time. But these normal hygienic procedures have no ill effects on the menstrual cycle. Regarding the fear of washing hair during menstruation, a doctor in Rio de Janeiro states: "Among enlightened women this fear is giving way to the reality that menstruation is a normal, physiological fact, not a sickness." And *Claudia*, a popular Brazilian women's magazine, remarked in its January 1976 issue: "A [menstruating] woman can and should eat everything, acid fruits, boiled eggs, fish, pork, greens, cheese. All this is part of a healthy diet and has nothing to do with stopping the flow during the menstrual period."

Some attribute control of the menstrual cycle to the moon, because of the average cycle's being 28 days. But the late Bergen Evans, author of the book *The Natural History of Nonsense*, claimed that this was an unwarranted deduction and quoted doctors who had observed that menstruation occurs at all times of the month, regardless of the lunar cycle, and that there is no justification for associating the date of menstruation with lunar phenomena.

Superstition has it that the approach of a menstruating woman may parch plants, dim mirrors, blunt knives, kill bees and make cakes fall. This is ridiculous. Yet, as Evans shows, women at the time of menstruation are naturally nervous, irritable and depressed. Hence, they easily do such things as breaking dishes, scolding the children and weeping at the slightest provocation.

Religion's Role in Superstition

By their religious leaders, people have been led to believe that God and the Devil are divinities that can be cajoled, flattered and bribed. So people try to find out the plans of such divinities and then proceed with efforts to influence them.

In Brazil it is common to see *Casas de Umbanda*. These are stores where one can

buy magic herbs, incense, beads, amulets, hog's-tooth necklaces, charms, books on voodoo arts, and parts of doll's bodies for use in casting spells and as a means of determining the future. At these stores the "Virgin Mary," Jesus, and the horned "Devil" stand side by side with other images.

On Friday nights, at about 11 o'clock, people place at street crossings black chickens, bottles of beer and cheap brandy, cigars, candy and fruit to curry the favor of "spirits."

One tale about the horseshoe comes from England. According to legend, while "Saint" Dunstan was working as a blacksmith, he was sought out by the Devil to fix one of his shoes. Dunstan, so goes the story, tied him to a wall and treated him so violently that Satan begged for mercy. Dunstan let the Devil go, but only after making him promise never again to enter a place where a horseshoe hung. Of course, the story is absurd. So why trust in a horseshoe?

Why Are People Superstitious?

When asked this question, usually people shrug their shoulders and say, "I don't know." Or they may quote their parents, or grandparents, whose word they accept unquestioningly. In Brazil, the mixture of Indian, African and European cultures has produced a vast number of myths and legends.

There are two factors, though, that nearly always lie behind superstitions—fear and ignorance. Fear of God's wrath, the Devil, sickness, death and many other such things regularly promotes superstitious beliefs and acts. People will grasp at straws to ward off calamity. Brewton Berry writes in *You and Your Superstitions:* "Superstition is nothing more than another chapter in history's years of research to conquer security. And since education, prohibition, sermons, satires and science have failed miserably in their fight against superstition, only SECURITY will succeed in destroying it." Closely related to fear as a cause of superstition is ignorance of the true cause of many calamities and especially ignorance of the Biblical view of many woes that afflict mankind.

An Antidote to Superstition

While showing that most religious beliefs are indistinguishable from superstition with its taboos, Brewton Berry writes: "But there exists another kind of religion that supports [the belief] that the Cosmic Power is constant and is not subject to whims, does not give in to flattery, is not deceived by charlatans, does not cater to favorites. This Power makes it rain and shine over good and bad alike. It does not favor those who recite creeds and light candles. Man's duty is not to prod . . . this Power so as to get from him what he wants, but rather [man should] try to discover the truth about the universe, the paths that should be followed and prepare himself for them. This belief was never popular. Its followers were insulted and forgotten and at least one of them was crucified."

The writer here refers to unpopular true Christianity. Like the faithful Israelites of old, Jesus and those who pattern their lives after him have never put their faith in "Lady Luck," omens or superstitions. Rather, they have sought guidance in life from the written Word of man's Creator, Jehovah God.—Deut. 18:10-12; 2 Ki. 21:6; Isa. 8:19; 65:11; Acts 16:16-24.

How do you feel about superstitions? You can break free from them. The best way to do so is by making a careful study of the Holy Bible and by molding your life according to its principles.

Education That Encourages Success

'BY HAVING deep love for Jehovah God and by being convinced of his love for you, you can make your way successful.' How do you react to such a statement?

An audience of 1,899 gathered at the assembly hall of Jehovah's Witnesses in Long Island City, New York, on Sunday, September 10, was in full agreement with this thought. It was expressed by W. L. Barry at the graduation exercises of the 29 students making up the 65th class of the Watchtower Bible School of Gilead. These students had completed a special five-month training course to prepare them for missionary work in foreign fields.

Years earlier, Barry had attended Gilead School and had thereafter enjoyed many years of working with missionaries in Japan. His encouragement to view a missionary assignment as an expression of God's love was, therefore, fortified by a rich background of personal experience. He was very realistic in pointing out that problems would be faced in a foreign assignment. There would be a need to get accustomed to a 'new language, new foods, a new missionary home arrangement and even new sicknesses.' Yet, by faithfully sticking to the work because of love for their Maker, Gilead-trained missionaries, strengthened by God's Word and prayer, can be successful.

The educational program of Gilead School had been designed to assist the students from both a spiritual and a practical standpoint. Calling attention to this, Don Adams referred to the special practical instruction that they had received about handling laundry and preparing meals in a missionary home. It is hoped that this new feature in the curriculum will contribute toward making missionary service more enjoyable for all concerned. Of course, this practical training is only incidental to the education that equips Gilead students to become better teachers of Bible truths. And, as Don Adams pointed out, a good attitude determines whether a missionary will be happy. Concern for the spiritual welfare of people and personal contentment would play a big part in their being missionaries who would faithfully stick to the work.

Another speaker, M. S. Allen, shared thoughts that were helpful in making a proper evaluation of success. He used as his theme the following question that Jesus Christ directed to John and Andrew: "What are you looking for?" (John 1:38) Allen noted that the motive for what we do is very important. For a successful Christian missionary that motive cannot be recognition, a wish to stand out as being better than others or the desire to be numbered among a privileged few. A missionary can benefit from the example of Andrew who was willing to take second place and who introduced others, including his own brother Peter, to the Messiah. Thus, if a person can find joy in humbly serving God by acquainting fellow humans with Jesus Christ, he can be a good missionary.

In a number of the lands to which the graduates would be sent, many people are illiterate. Therefore, Richard Wheelock encouraged the use of the illustrations in a recently published book. Thus, after learning the local language, the new missionaries could succeed in reaching even an illiterate populace with the Bible's message.

K. A. Adams, an instructor in the school, cautioned against viewing people from a human standpoint, for Jesus Christ said: "Stop judging from the outward appearance." (John 7:24) Response in a particular territory might be slow, but God may see in the people something that we do not. For example, after many years of working in Italy and Spain, Jehovah's Witnesses saw little progress. However, during the past few years there has been tremendous growth. This was good encouragement for new missionaries to remain in their assignments.

Similarly, U. V. Glass, the school's registrar, highlighted the importance of patience. On reaching a foreign assignment, a missionary is like a plant that has been transplanted and may experience a setback. Yet, by remaining there, being patient, he will eventually experience blessings.

The school's president, F. W. Franz, placed considerable emphasis on the personal effort that the graduates would have to put forth to remain divinely approved. To this end, he used the words of Jesus Christ: "Pay attention to what you are hearing. With the measure that you are measuring out, you will have it measured out to you, yes, you will have more added to you." (Mark 4:24) Hence, the measure of undivided attention and profound respect that a person shows toward the Master, Jesus Christ, will determine the measure of his spiritual growth. The individual must also watch his associations so that nothing will interfere with his advancement as a Christian. Hence, the students were strongly warned about keeping company with persons who could contaminate them with worldliness.

The program that was later presented by the graduates also highlighted essentials for success. Especially was this true of the two Bible dramas. Among other things, the first one revealed the importance of faith in and obedience to God's direction in order for a person to share in the blessings that will result from the fulfillment of divine promises. The second drama dealt with events from the reign of King Jehoshaphat and emphasized that his success depended on total reliance on Jehovah God.

Truly, the graduation exercises of Gilead's 65th class reflected the fact that the chief objective of the school is to help the students to make a success of missionary work. At the same time, the entire program served to encourage all in attendance to look to Jehovah God for aid in making their way successful.

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PS Form 3526, Mar. 1977 (Page 1) (See instructions on reverse)

FACTORY-BUILT HOUSES

Which One Would You Buy?

JOHN liked Michael's house plans. "I want to give my builder the same plans and have him build my house exactly like yours." John did. When finished, the two houses looked alike. But they were not built alike. Michael had ordered his house ready-built from the factory. It was delivered in two long halves. A crane lifted each of the halves or sections off the flatbed conveyers and set them side by side on the foundation. A carpenter joined the sections by closing in the gables and covering the interior seams with molding strips. Within two weeks after Michael's foundation was prepared, his house was finished and landscaped and ready to be occupied.

John's house took months to complete. His contractor used the conventional "stick-built" method of building the house right there on the site.

John mused: "Maybe Michael was smart to order his entire house ready-built. . . . But I was suspicious that all he was getting was a fancy mobile home." Most people think like John, that the only sort of dwellings to come out of factories are *cheap, flimsy* "house trailers."

But during the past 10 years especially, a growing number of "house shops" have appeared. Usually they are small, independent single-plant manufacturers compared to giant mobile-home corporations with chains of plants. The houses they build, so long as the style and shape are kept fairly clean and simple, are hard to tell apart from conventional houses whether finished in wood, metal or masonry veneer. How, then, can the houses they build be distinguished from their forerunners, the mobile homes?

Michael's "Shop-Built" House

It is a matter of building codes and standards. Some American states have administrative boards to supervise factory-built housing. The state or its agency takes responsibility to inspect the houses as they are built on the factory assembly line. It requires them to meet the same general construction standards as "site-built" houses of the same type. Structures meeting its standards are then "deemed to comply with the requirements of all ordinances or regulations enacted by local government," quoting from "Rules of Georgia State Building Administrative Board" regulating Factory Built Housing, Chapter 90-2-7(4).

This means that a house bearing that state's emblem or decal of approval can be sited just about anywhere the owner pleases within the State of Georgia, because state ordinances overrule local ordinances that might prohibit, for instance, a mobile home. It is very important to make sure before contracting for a manufactured house that it can be sited where

you want it. An unbelievable number of people buy a manufactured house only to discover to their dismay that it cannot pass some local ordinance restricting it to a mobile-home rental park or mobile-home subdivision.

The house Michael ordered meets conventional building codes for houses. Mobile homes are built to a different code. For example, part of a mobile home is the steel underbridging with axles, wheels and pulling hitch. While the "running gear" can be removed, the underbridging or chassis cannot. It is part of the floor construction. Now, Michael's house had no underbridging attached. His two house sections were delivered on conveyance platforms called "lowboys." When the crane lifted the sections off the "lowboys" there was nothing underneath but conventional wood-floor joists to rest on the foundation. The "lowboys," or delivery flatbeds, are returned to the factory.

Fred's "Modular" House

John and Michael have another friend, Fred. Fred bought a "modular" house. Fred's house was the same size as theirs, 24 feet (7 meters) wide and 70 feet (21 meters) long. (There is a wide range in sizes.) Fred's house has a gable roof like theirs, and rough wood siding. By the way, Fred got his house fully furnished, with everything color coordinated by a professional decorator. When the area was landscaped a casual observer could not distinguish Fred's house from theirs.

What is the difference? There might be a host of minor differences that appear on closer scrutiny. For example, Fred's partition walls might be thinner than Michael's. But when Fred looks under his "crawl space" he sees one obvious difference. The bottom of his house includes the big steel underbridging. The steel chassis rests on the foundation piers and the perimeter walls, and the wood subfloor rests on the chassis. Fred boasts that his house has two foundations, one wood, one steel.

Think of Michael's "shop-built" house and Fred's "modular" house as representing two layers on a cake. Michael's is the top layer because it is built to a code similar to that of conventional housing. Fred's is the next layer. His house meets a different building code. It is one of three national building codes, either UBC, BOCA, or SBCC. One or the other of these codes is represented by an insignia or decal somewhere on Fred's house. It testifies that the codes people or their "third party" agency are responsible for inspecting the house on the assembly line. If city and county governments want to, they can prohibit a "modular" house like Fred's from being sited in just any area he might choose. On the other hand, they might not consign it to mobile-home locations. It usually ends up in areas zoned for lower-cost housing or in agricultural areas.

Ralph's "Mobile" Home

Ralph also bought a house. It is the same size as Michael's and Fred's. It has a gable roof and rough wood siding. Set on a permanent foundation and landscaped, it looks much like their houses. But Ralph's house is the third and bottom layer of the manufactured housing cake: it is a "mobile" house, a "doublewide."

Since June 1976 manufacturing of mobile homes in the United States has come under supervision of the Department of Housing and Urban Development (HUD). Ralph's house wears the HUD emblem. It signifies that HUD or its "third party" agency is responsible for inspection of the house on the assembly line.

While HUD standards are not the same

as the standards for modular houses, at least the standards are uniform everywhere. But while HUD has established a uniform national standard, no state or local authority has to accept the HUD-approved structures. Most cities and counties relegate mobile homes to strictly defined areas such as parks, where lots are rented, or to special subdivisions where lots are sold.

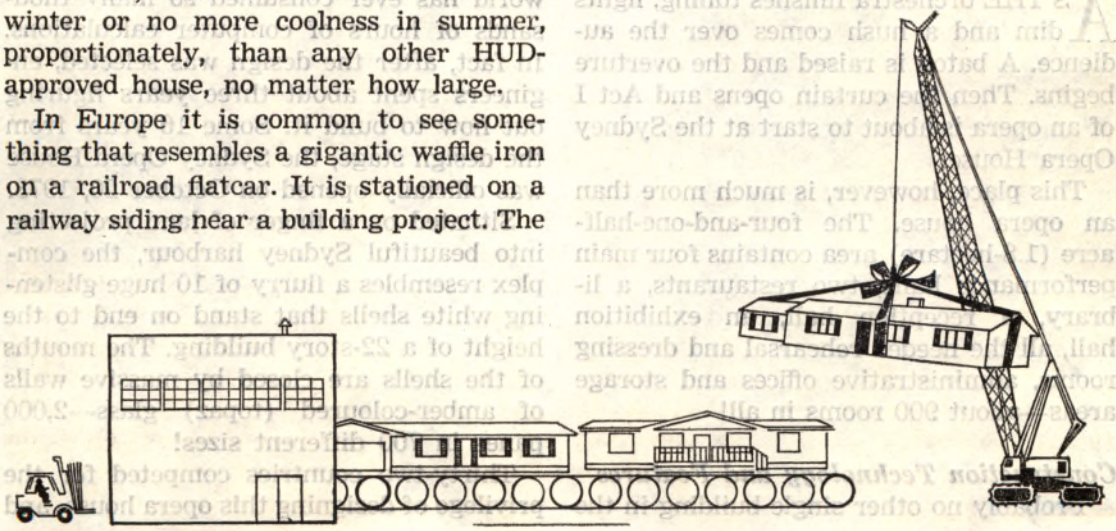
Government Standards for Mobile Homes

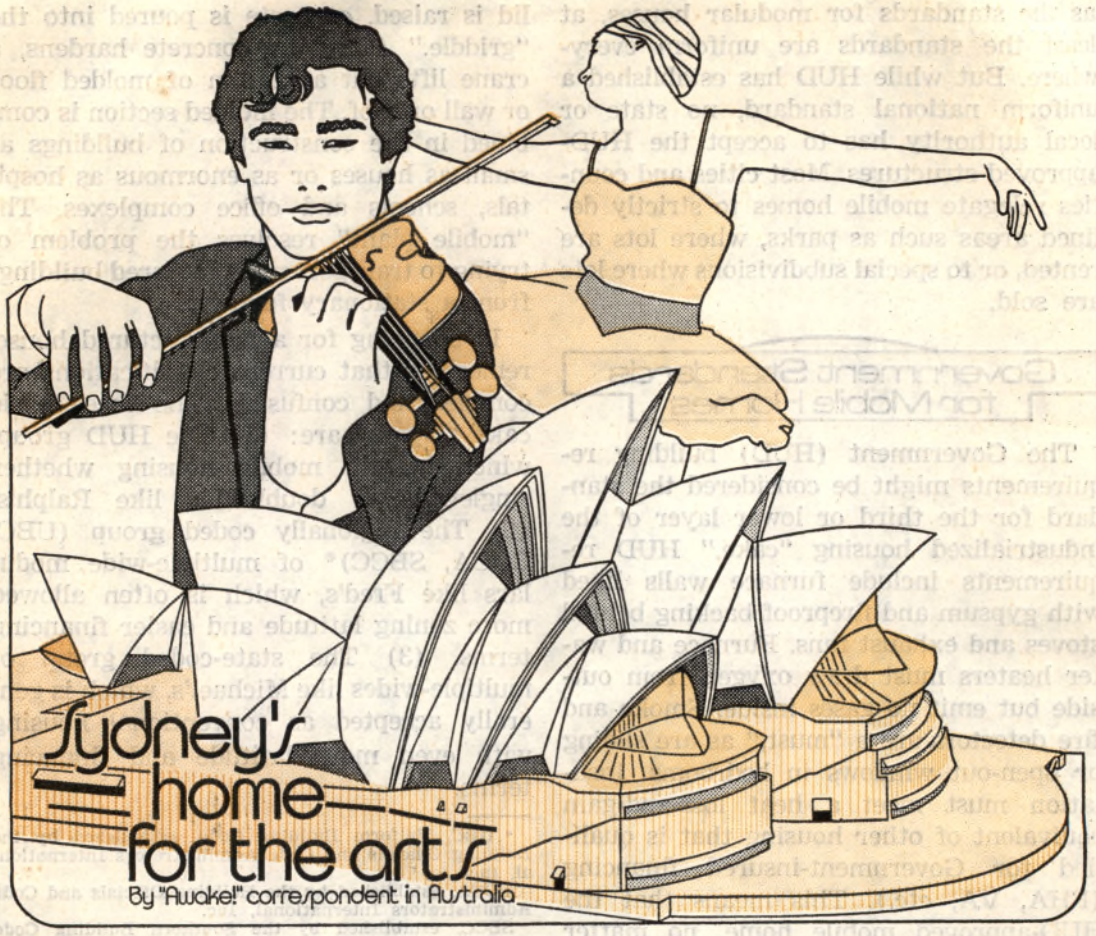
The Government (HUD) building requirements might be considered the standard for the third or lower layer of the industrialized housing "cake." HUD requirements include furnace walls lined with gypsum and fireproof backing behind stoves and exhaust fans. Furnace and water heaters must draw oxygen from outside but emit no gases inside. Smoke and fire detectors are a "must," as are sliding or open-out windows in bedrooms. Insulation must meet a heat loss-and-gain equivalent of other housing that is qualified for Government-insured financing (FHA, VA, etc.). This means that the HUD-approved mobile home, no matter how small, must lose no more warmth in winter or no more coolness in summer, proportionately, than any other HUD-approved house, no matter how large.

In Europe it is common to see something that resembles a gigantic waffle iron on a railroad flatcar. It is stationed on a railway siding near a building project. The lid is raised, concrete is poured into the "griddle." After the concrete hardens, a crane lifts out a section of molded floor or wall or roof. The molded section is combined in the construction of buildings as small as houses or as enormous as hospitals, schools and office complexes. The "mobile plant" resolves the problem of trying to transport manufactured buildings from a stationary factory.

In shopping for a manufactured house, remember that current classifications are complex and confusing. The three basic cake "layers" are: (1) The HUD group, which is still mobile housing whether singlewide or doublewide like Ralph's. (2) The regionally coded group (UBC, BOCA, SBCC)* of multiple-wide modulars like Fred's, which is often allowed more zoning latitude and easier financing terms. (3) The state-coded group of multiple-wides like Michael's, which is generally accepted as conventional housing with even more latitude and financing terms.

* UBC, Uniform Building Code, established by the Building Officials and Code Administrators International, Inc.
BOCA, established by the Building Officials and Code Administrators International, Inc.
SBCC, established by the Southern Building Code Congress.





Sydney's home for the arts

By "Awake!" correspondent in Australia

AS THE orchestra finishes tuning, lights dim and a hush comes over the audience. A baton is raised and the overture begins. Then the curtain opens and Act I of an opera is about to start at the Sydney Opera House.

This place, however, is much more than an opera house. The four-and-one-half-acre (1.8-hectare) area contains four main performance halls, two restaurants, a library, a reception hall, an exhibition hall, all the needed rehearsal and dressing rooms, administrative offices and storage areas—about 900 rooms in all!

Construction Technology and Features

Probably no other single building in the world has ever consumed so many thousands of hours of computer calculations. In fact, after the design was selected, engineers spent about three years figuring out how to build it. Some 16 years from the design stage, the Sydney Opera House was officially opened on October 20, 1973.

Situated on a finger of land projecting into beautiful Sydney harbour, the complex resembles a flurry of 10 huge glistening white shells that stand on end to the height of a 22-story building. The mouths of the shells are closed by massive walls of amber-coloured (topaz) glass—2,000 panes in 700 different sizes!

Thirty-two countries competed for the privilege of designing this opera house, and

233 design entries were submitted. First prize went to 38-year-old Danish architect Jørn Utzon, who thoughtfully patterned his design to echo the windblown sails of boats navigating the harbour. His design required erecting more than four acres (1.6 hectares) of concrete and suspending it in the air. All 10 shell-like concrete formations had irregular curvatures. Engineers in London, England, tried six experimental construction methods, each of which had to be abandoned. In fact, the foundation was begun before it was even known whether it would be possible to build a structure according to the magnificent concept.

Finally the Danish architect suggested changing the irregular shape of the shells to the geometry of a perfect ball—one that would be 492 feet (150 meters) in diameter. This meant that each of the 10 shells, though different in height, would follow the same basic curvature. The new design enormously simplified construction.

The concrete ribs forming the walls of each shell taper from a very narrow point at ground contact, expanding as they rise upward, and they also curve inward to form both the roof and the wall. The basic wall and roof pattern resembles what one sees when looking at the blades of an expanded hand-operated fan.

Over 1,000,000 ceramic tiles provide the outer covering for the concrete structure. Some of the tiles are glossy white, and some have a cream finish. The massive off-white superstructure is accentuated even more by being situated on a 600-foot (180-meter) podium or foundation area made of pinkish-colored granite and fronted by what is claimed to be the largest exterior staircase in use anywhere.

Since the official opening, over 6,000,000 patrons have enjoyed thousands of performances here. High has been the praise of the exquisite location and the fascinating beauty of the design. The acoustics of the performance halls are generally agreed to be on a par with the best in the world. One musician said of the Concert Hall: "We have to be so careful what we play here—the acoustics are so good."

Each hall is designed acoustically so that the sound will neither be distorted nor need amplification. However, a sophisticated sound system is incorporated in each hall. When needed, this system evenly distributes sound to all seats undistorted and with equal intensity. For acoustic reasons, there are no carpets on the floors of the two large halls. When a person sits down or gets up, he will hardly make a noise. This is because all seats are hydraulically controlled.

Those who are late for a performance must wait outside for a suitable break. But there is no reason for them to be too upset. A closed-circuit television system enables the public outside, the artists or the staff to listen to and observe what is going on in the various theatres at any time.

The air seems fresh, and the temperature is just right. Some 4.5 million dollars' worth of air-conditioning equipment changes the air every eight minutes in all theatres and once every two minutes in the kitchens.

The many passages, staircases and rooms backstage and on levels under the main auditorium are off limits to ordinary patrons. Here, for example, a symphony orchestra conductor can tune an instrument in his dressing room by calling up the precise sound he needs through his room-service module. By means of closed-circuit television, he can get an early view of the audience or watch his orchestra tuning up or rehearsing. He may even look at a performance in another auditorium. After his performance, he can, if he desires, relax and watch a movie on the module. The same module contains a telephone that allows him to call anywhere in the world.

On account of the maze of passages,

staircases and rooms, some performers have become confused. One conductor said: "I have lost my way to the stage twice. Once I ended up in the canteen and the other time in a broom cupboard."

Very impressive is the 2,690-seat Concert Hall with its sculptured white-birch ceiling rising 90 feet (27 meters) above. Here one may hear symphonies, chamber music, choral productions or popular music. The Concert Hall is also used for conventions. There are translation facilities for up to five languages. Since these facilities employ a radio system, no plugs or wires connecting the headphones are needed.

Suspended well above the platform are 21 large acrylic doughnut-shaped "acoustic clouds." These reflect some of the sound back down to the stage, giving the orchestra its own private acoustical system without interfering with the sound directed to the audience.

The $400,000 Grand Organ, which is still under construction, provides a dramatic backdrop to the stage. It will be the largest mechanical-action organ in the world, with 10,500 pipes. Only 100 of the burnished tin pipes and 24 bronze bells will be visible from the audience. The organ will be 30 feet (9 meters) above the floor, and will be 50 feet (15 meters) high. The organist will have to watch the conductor on closed-circuit television.

There are smaller theatres too. The Drama Theatre, seating 544, has an adaptable stage. Its front part can be lowered to form an orchestra pit, alternative entrance for actors or an extra seating area. The stage also has two concentric turntables so that scenes can be changed in a matter of seconds. Or, the actors can simply walk from one set to the other as if going from the one location to the other. As with all auditoriums, the stage lighting can be programmed to turn on and off automatically. Up to 200 light changes can be stored on computer tape for use whenever any performance is to be repeated.

The Opera Theatre

This evening we enjoyed an opera in the 1,547-seat Opera Theatre. We had no trouble concentrating, as the walls and roof around us are stained black so that nothing visually would distract us. There were four acts, with a short break between each as the scenery changed. As there was very little space in the wings, we wondered where all the scenery disappeared. We learned that a special lifting platform raises lighter scenery into the space above the stage or brings up scenery from below the stage to a height of three stories. Because a large section of the stage revolves, it is used to make quick scenery changes during an act.

A New International Trademark

In the daytime the area is very much alive with rehearsals, matinee performances, lunchtime lectures, film showings, sightseers, people lunching at the outdoor harbourside restaurant, and even lunchtime joggers using the "Broadwalk" to keep fit.

But it is at night that the activity really attains its zenith. With its 10 great white roof shells lit up amid the pinpricks of light from around the harbour, the whole complex seems to live as in another world. Old and young arrive, bedecked with jewelry and furs or just clothed in shirts and jeans, to escape from the rush and pressure of life into a world of fantasy for a few hours.

The building complex has become a new international symbol for Australia, alongside the Sydney Harbour Bridge, the kangaroo and the koala bear. After visiting it, we can indeed agree that it is majestic in concept and an astonishing feat of construction—a tribute to man's divinely endowed creative abilities.

The Bible's View

Do We Suffer for Our Sins?

"THEY should not be allowed to get away with it!" Have you ever heard someone say that, after having suffered some injustice that he had been helpless to correct? People often get angry when someone sins against them with apparent impunity. They feel that the person should "pay" for what he did. Do we "pay" for our sins? What does the Bible say?

According to the Bible, we are all sinners. Since people suffer for their sins, we should all suffer. We have inherited sin and imperfection from our first father, Adam. (Gen. 8:21; Rom. 5:12) And to that inherited Adamic sin, we add the many, many sins that we personally commit due to imperfection.—Rom. 3:23; Jas. 3:2; 1 John 1:8.

Do we suffer for these sins? Yes, indeed. The apostle Paul stated: "The wages sin pays is death." (Rom. 6:23) From Adam's time until now, man has experienced the truth of that statement. He has been suffering imperfection, sickness and eventual death because of sin.

Another result of sin is alienation from God. Jehovah is "too pure in eyes to see what is bad." (Hab. 1:13) Hence, sin creates a barrier between man and his Creator. (Isa. 59:2; Col. 1:21) Sinful men suffer because of not enjoying to the full the blessings coming from a close relationship with God. And they suffer too because of following the course of human wisdom instead of God's wisdom. Many of the apparently unsolvable problems in the world today are a result of the alienation of man from God.—1 Cor. 3:19.

Jehovah lovingly purposed to save mankind from this situation. He sent his own Son to earth to provide a ransom for us. Jesus came and suffered death. But his suffering was for *our* sins, not for his own. (1 Pet. 2:21, 24) Because of this act of extraordinary loving-kindness, we have the opportunity to cease from suffering from our sins, and to live forever. As Jesus said: "God loved the world so much that he gave his only-begotten Son, in order that everyone exercising faith in him might not be destroyed but have everlasting life."—John 3:16.

Does this mean that men no longer suffer for their sins? Well, until the ransom sacrifice is fully applied in God's new order, we will continue to get sick and die. (Rev. 21:3, 4) But those who 'exercise faith' do have a lightening of the load. By means of Jesus' sacrifice, they are being reconciled to God. (Col. 1:19, 20) In other words, they have a relationship with God. They can pray and be heard by him. (1 John 5:14) If they commit a sin due to imperfection, they can go to God through Jesus Christ in prayer and confess their sin. And their sin will be forgiven. (1 John 2:1, 2) Also, they have the certain knowledge that, eventually, they will be able to gain eternal life. Even those who die will be resurrected so as to have this opportunity. (John 5:28, 29) In this way, God has greatly alleviated the suffering, due to sin, on the part of those who exercise faith in him and his Son, Jesus Christ.

However, those who adamantly refuse to ac-

cept the ransom sacrifice, but who choose to remain willful sinners are given a very serious warning. On the coming "day of vengeance" they will suffer the "judicial punishment of everlasting destruction" without the hope of a resurrection, if they will have refused to change their sinful course. (2 Thess. 1:9; Isa. 61:2) This is an everlasting annihilation, a complete cessation of life for all time.

For Christians who do accept Jesus' ransom sacrifice, does this mean that it does not matter anymore if we sin? Not at all! Jehovah still hates sin in all its manifestations. (Prov. 6:16-19) Hence, we should never feel that it is all right to give in to temptation, and then plan on repenting and being forgiven on the basis of Christ's sacrifice. Our love for God and appreciation of the ransom sacrifice will move us to adopt his attitude toward sin. "Lovers of Jehovah" are urged to "hate what is bad." (Ps. 97:10) Hence, we will fight every tendency to sin that we find in our own bodies. (Rom. 7:21-23; 1 Cor. 9:27) Then, if we do sin because of imperfection, Jehovah will forgive us. —1 John 1:9.

Besides, the Bible shows that there are other ways that a person can suffer for his sins. Reflecting on these may help a Christian to develop the same hatred of sin that God has. For example, if a sin happens to be against the law of the land —as in the case of murder or stealing— a person can suffer imprisonment or something even worse because of it.—Rom. 13: 3, 4.

Even if the sin does not happen to be against the law of the land, it can cause suffering. Regarding the sinful, immoral practices of his day, the apostle Paul said that those practicing such things 'receive in themselves the full recompense, which is due for their error.' (Rom. 1:27) Because of the widespread "new morality" —which in most cases is simply the sin of immorality—there is an epidemic of venereal diseases, as well as unwanted pregnancies, abortions, broken marriages and emotional instabilities. Surely, people having such unhappy experiences are suffering because of their sinful course.

Yes, the Scriptural rule holds true: "Whatever a man is sowing, this he will also reap." (Gal. 6:7) For example, someone may experience a 'fit of anger.' (Gal. 5:20) Afterward, he may approach Jehovah in prayer and beg for forgiveness. He may come to feel that forgiveness has been extended to him. Meanwhile, however, he has to suffer the pangs of his conscience, and the difficulty of going to the ones affected and mending relations with them.

A more serious sin may bring harder consequences. Imagine a married Christian man who commits adultery in a moment of temptation. Of course, if he is truly repentant, Jehovah will forgive even such a serious sin. But just think of the suffering the man's conscience will inflict on him first! Reflect on the embarrassment of going to the mature Christian men in the congregation to confess the wrong and request their help. (Jas. 5:13-15) Think of the anguish that the man's mate will feel, and consider all the efforts that he will have to make gradually to rebuild trust and unity in his marriage—if his wife forgives him at all! How much better not to sin in the first place!

So, then, do we suffer for our sins? Undoubtedly, we do. Because of Adamic sin, man has been suffering sickness, death, imperfection and alienation from God throughout human history. Even in our everyday life, we often suffer the natural consequences of the sins we commit. Hence, nobody "gets away" with sin. But are we not grateful to Jehovah God and Jesus Christ that we can now have the hope of escaping from sin's baleful influence, and of gaining eternal life with no more suffering due to sin?

Watching the World

China's "Flying Knife" Surgery

◈ How essential are blood transfusions to the work of a good surgeon? A report by John Roper, Health Services correspondent for the London *Times*, offers a revealing insight. After visiting the People's Republic of China, he writes: "Surgeons in our group were impressed by the 'flying knife' technique of the Chinese doctors: the speed and neatness of the operation and, particularly in the case of the patient with a stomach ulcer, how little bleeding there was.

"This appears to be true of much of Chinese surgery. Although blood for transfusion is available, there are no blood banks or blood donor services as we know them, as apparently the demand for blood is small."

Message to New Pope

◈ The periodical *Il Mondo*, described as "Italy's leading economic weekly," recently published an open letter to the new pope, John Paul I, appealing for "order and morality" in the Church's financial dealings. "Believe us, Your Holiness," wrote the weekly's editor, Paolo Panerai, "we understand well the [need] of the Vatican to have financial autonomy to sustain its apparatus, to spread the faith, in addition to pious works. . . . But don't you think, Your Holiness, that to achieve those objectives there are ways other than the most unscrupulous channels that capitalism offers?"

With the letter *Il Mondo* published a report that asserted that the Vatican bank (Institute for Religious Works) has an estimated $2 billion (U.S.) in deposits, held in part by "some of the biggest Italian industrialists and businessmen." The editor asked: "Is it right that [the Vatican] has a bank whose acts help Italians transfer capital [abroad] and evade taxes?"

French Titles Dropped

◈ On orders, said to have come from President Valery Giscard d'Estaing, aristocratic titles before the names of about 5,000 Frenchmen have been dropped from the telephone book. The move is to save space, according to the post office, which also controls France's telephones. The post office carried the idea a step farther, and "to prove its democracy," says *Parade* magazine, "has also dropped such titles as 'Dr.' and 'Rev.'"

Atom Bomb Consciences

◈ How does it feel to participate in the simultaneous deaths of over 80,000 people? George Caron was tail gunner of the bomber that released an atomic bomb on Hiroshima 33 years ago. He recently recalled: "I felt great that I was in something like this. I was hoping it would work and we'd get away from it." Since then he has had "no bad dreams, no remorse: it had to be done." Belgium's *To the Point International* magazine notes that "Caron's clear conscience contrasts strongly with that of Claude Eatherly's who died a few weeks ago. He experienced years of anguish and remorse having been the spotter pilot who guided the [bomber] to its target." (See *Awake!* September 22, 1978, p. 29.)

Reuse Uncanceled Stamps?

◈ Some people, as an economy measure, peel off all uncanceled stamps from their mail and use them again. An American senator's secretary was doing this to the tune of $5 to $10 a day, much to the delight of the senator, who claimed to be saving the taxpayers' money. However, the U.S. Postal Service says that such reuse is illegal.

Aristotle's Limitations

◈ The *Athens Daily Post* reports that, in August in Thessalonica, Greece, an international congress was held marking 2,300 years since the death of Aristotle. The famous Greek was described by Professor John N. Theodorakopoulos of Athens University as "the first important systematic philosopher." However, he was limited by human wisdom, as were his philosophical predecessors, Anaximander, Anaxagoras and Empedocles. Thus, he also fell into evolutionary thinking. Aristotle wrote: "Nature proceeds little by little from things lifeless to animal life in such a way that it is impossible to determine the exact line of demarcation."

Monks Hoard Texts

◈ It was recently revealed that two years ago Greek Orthodox monks on Mt. Sinai found thousands of early Christian textual fragments. The parchment and papyrus

remnants included eight missing pages from the valuable Codex Sinaiticus, a fourth-century Greek Bible manuscript held in the British Museum. "The monks have kept the lid on their find," reports *Christianity Today*, "allowing relatively few remnants to be microfilmed." Why? "Rivalries among scholars, church factions, and governments are part of the reason for the foot-dragging," says the magazine.

World's Noisiest City

◈ The average noise level in Hong Kong from 6 a.m. to midnight is said to be comparable to that of a jetliner flying a few hundred feet overhead, according to a researcher from the University of Hong Kong. "As a whole city, Hong Kong is the noisiest in the world," he said. A recently completed survey revealed that the overall average mean noise level in the city's built-up areas is 76 decibels (db). The corresponding sound level in New York city is 66 db, only reaching 75 db in downtown Manhattan. Comparable overall averages in London are 62 db; Düsseldorf, 63 db; and Tokyo, 57 db. An increase of three decibels means a doubling of the amount of noise.

Diamond Deception

◈ Since most South African diamonds are shaded slightly yellow, deeper yellow stones and brilliant blue-whites are much more costly. However, fraudulent operators have learned that bombarding common diamonds with neutrons and then heating them creates the valuable deep-yellow color—for a possible 400 percent profit! To expose the fraud, according to Britain's *New Scientist*, gemologists have relied on a side effect of the neutron bombardment that makes the altered gems highly absorbent to a certain wavelength of light. But now it has been learned that heating the diamonds even more destroys this property—so it's back to the laboratory for the fraud hunters.

"Acupuncture Cures Smoking"?

◈ *Soviet Life* magazine reports that "Scientists of the Central Research Institute of Reflex Therapy have evolved new methods of diagnosis and treatment by acupuncture." Among their experimental findings, claims the journal, is the discovery that acupuncture needles at certain points in the ear cause "revulsion to smoking in the patient." Assertedly, "about 90 per cent of the [experimental] participants gave up this harmful habit."

Rhine Renewal

◈ After 30 years of absence, salmon were recently caught in Germany's famous Rhine River. The first unbelieving fisherman was convinced that his was not a unique catch when another fisherman caught one the next day. The river had acquired a reputation as 'Europe's largest sewer.' However, the salmon catches, as well as some trout sightings, indicate that efforts to curb the disgorgement of untreated sewage by cities along the Rhine are paying off.

London Dwindles

◈ The population of London is now lower than it has been for 70 years—under seven million—according to the Office of Population Censuses and Surveys. Before World War II, the metropolis was over eight and a half million, and at one time London was the world's largest city.

Biggest Bank Embezzlers

◈ According to banking and insurance sources, the amount of embezzlement losses at American banks has tripled in the past six years. The increase is due "almost exclusively to the fact that senior bank managers have been putting their hands in the till at an unprecedented rate," said the New York *Post*. Embezzlement by bank tellers is small compared to the money stolen by bank officials, since tellers do not have access to such large amounts. Embezzlement by bank executives has created multimillion-dollar losses that have threatened the very existence of some banks. F. Le Munyon, an insurance official, cited inflation as one reason for the upsurge, stating: "People need more money today to continue to live in the style to which they are accustomed, and a bank officer has a unique opportunity to get ahold of that money."

Huge Abortion Toll

◈ A recent estimate by *Contemporary Review* of London puts the worldwide toll of abortions each year at about 45 million, equal to the entire population of Turkey, or the Philippines. Since many abortions are performed illegally, injury or death to the woman often results. The death toll among these women is estimated to be about 150,000 annually. In addition, a study of 65,000 women in New York and Hawaii found that those who have had an abortion have, in later pregnancies, a 35-percent-higher rate of miscarriages than normal. Other pregnancy problems, such as low birth weight and premature birth, were about 25 to 50 percent higher for women who previously had abortions.

Living Lawn Mowers

◈ Officials of a town in Ohio were concerned that workers might be injured mowing the grass at a hilly sewer-plant site. So they obtained six sheep to do the job. They did well, but tended to avoid the steeper slopes. The village administrator then obtained two goats, which took care of the steeper hilly areas with ease. It is reported that "the grass is neater than ever."

Careful with That Hammer

◈ In one year, more than 30,000 individuals in the United States were treated in hospital emergency rooms for injuries associated with hammers. The most frequent cause of injury was striking the thumb or fingers while hammering, resulting in cuts, bruises and broken bones. Injuries also resulted from hammerheads flying off the handles and metal chipping off hammerheads. Safety experts suggest using the right hammer for the job, with the hammer face always larger than the head of the object the hammer is striking. For example, if a person is striking a metal chisel that is one half inch (1.3 centimeters) in diameter, the hammer face should be at least one inch (2.5 centimeters) in diameter.

Joggers, Beware!

◈ Dr. Roger H. Michael of the American College of Sports Medicine reports that when knee, leg, ankle and foot problems are considered, more injuries are caused by jogging than by any other sport. Citing what he considers to be the cause, Dr. Michael states that "often the uninitiated . . . will get a bad pair of tennis shoes and start running on hard surfaces." This, he says, can result in "very incapacitating" problems "and can lead to long-term difficulties if not treated properly."

Rat "Explosion"

◈ Rats are on the increase, particularly in underdeveloped countries. In parts of Asia and Africa rats outnumber humans by 10 to one. India has an estimated rat population of five to six billion, almost 10 for every Indian. Some village homes have up to 18 rats each. These armies of rodents eat more than three million tons of food grains a year in that land, damaging much more. United Nations experts say that Burma loses some 10 percent of its annual rice crop to rats. Authorities blame the upsurge on the lack of coordinated effort, insufficient funds and not enough public education on the subject.

Alcoholism's Problems Mount

◈ The number of Americans who admit that liquor is causing them trouble has doubled in recent years. In 1974 about 12 percent of all persons acknowledged that an alcohol-related problem was adversely affecting his or her life. Now one person in four (24 percent) says it is. The increase has come in all regions of the nation, and among nearly all social and economic groups. Among those separated or divorced, one third say liquor was a cause of trouble. And authorities estimate that each year now, as many as 6,000 babies will be born mentally retarded because their mothers drank too much alcohol during pregnancy.