

Spring 1996

HIGH
LEADER
EDITION

ADVENTURE

**Celebrating
the 100th Issue**

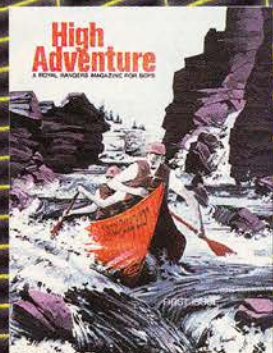
A Royal Rangers Magazine For Boys

NASA: The Space Shuttle Quest

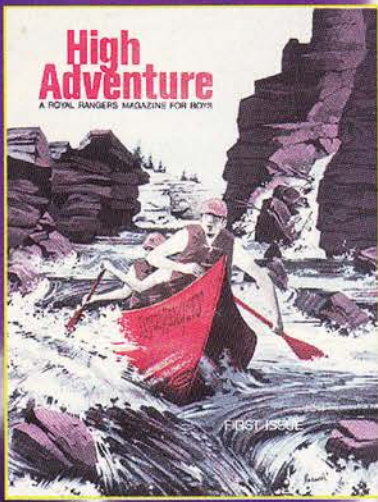
Microspace: The Tiny World in a Drop of Water

LFTL Junior Councilmen Program

A Twinkle in the Sky, a Twinkle in His Eye



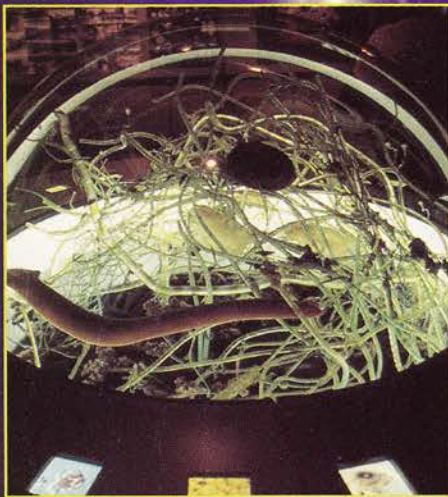
← **First Issue**



High Adventure's very first issue way back in 1971!



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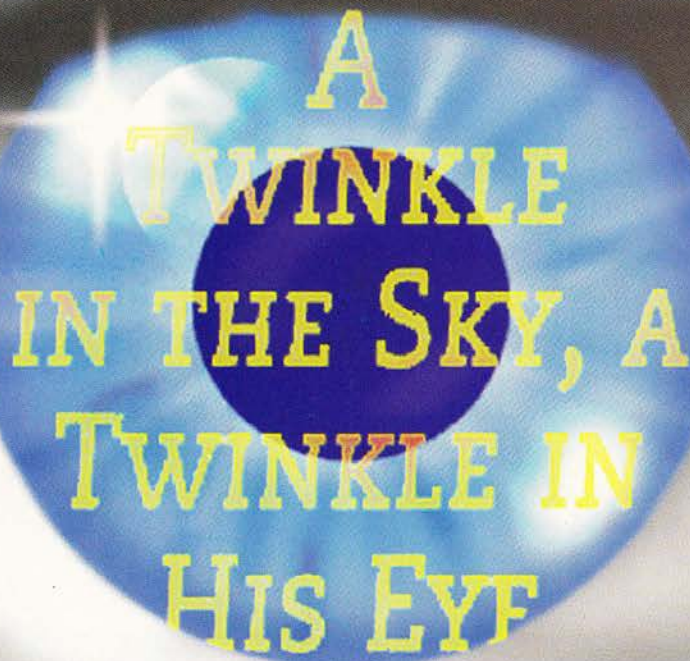
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A
TWINKLE
IN THE SKY, A
TWINKLE IN
HIS EYE

by Marshall Bruner, editor

“Have you taken the time lately to gaze at the stars?” Jesse’s commander asked the Pioneers as they lay beneath the starlit sky. “The night sky is one of God’s greatest creations, yet so often overlooked by man in his busy schedule.”

Jesse began to think about that for a moment. Come to think about it, he had been too busy lately to enjoy the stars above. School was coming to a close and the final tests had mounted up. School, school, school, that’s all Jesse could think about lately.

But now Jesse lay on his sleeping bag underneath the dark, dark sky. The campfire

felt warm beside him. He heard his commander say that over 6 billion tons of meteorites, which we call falling stars, have plunged to the earth.

About that time Jesse began to notice the different shapes, called constellations, the stars formed. His mind began to wander as the commander talked. Jesse imagined that he was an astronaut, floating through space in the Space Shuttle. *There’s the blue earth below me and the bright moon over there*, he dreamed. *Wow, how did God*

create so many stars?

Then Jesse imagined he was in a time-traveling machine. Jesse pulled a lever and there he was: in the Old Testament days. He imagined seeing Abraham standing under the open night sky, crying. The Scripture passage Jesse had recently read seemed to come to life.

Abraham was without child, and he wanted children so badly. In a vision God said to Abraham, “Look up at the heavens and count the stars—if indeed you can count them.” Then God said to him, “So shall your offspring be.”

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LFTL Junior Councilmen Program: Growing Strong

The Light-for-the-Lost Junior Councilmen program is now 3 years old. We are seeing great results—already 135 Rangers have become Junior Councilmen!

You may recall that we first announced this new program in the spring 1993 *High Adventure*. Since then Rangers across the nation have joined up and thousands of dollars have been raised for Junior Councilmen gospel literature projects.

In the last issue we reported that over 200,000 copies of *The Book of Hope* have been distributed. Along with *The Book of Hope* (for stateside), *Edward Elephant Says...* has now become the overseas project—Project # 1800—for the LFTL Junior Councilmen program. For the cost of one dime, a copy of *Edward Elephant Says...* can be provided.

If you have joined the Junior Councilmen program, you can proudly read your name below. If you haven't yet joined, ask your commander how you can. You will get the chance to attend LFTL rallies with your commander, learn lots about missions, plus be actively involved in reaching the world with gospel literature.

For further information, contact *Light-for-the-Lost*; 1445 Boonville Ave.; Springfield, MO 65802-1894

District	First Name	Last Name	Church	City	State
Alabama	Chris	Craft	First Assembly	Russellville	Alabama
Arizona	Nathan	Bucholzer	First Assembly	Phoenix	Arizona
Arizona	Dalin	Dorris	North Freeway Assembly	Phoenix	Arizona
Arizona	Adam	Hauf	North Freeway Assembly	Phoenix	Arizona
Arizona	Joseph	Molodecki	Glad Tidings	Tucson	Arizona
Arizona	Scott	Nelson	Bell Road Assembly	Phoenix	Arizona
Arizona	Erich	Pearson	First Assembly	Phoenix	Arizona
Arkansas	Gregory	Burris	Van Buren First Assembly	Van Buren	Arkansas
Arkansas	Matthew	Jira	First Assembly	N. Little Rock	Arkansas
Arkansas	Dustin	Pugh	First Assembly	N. Little Rock	Arkansas
Georgia	David	Lincoln	First Assembly	Albany	Georgia
Georgia	Michael	Ridenhower	First Assembly	Albany	Georgia
Georgia	Joshua	Sumner	First Assembly	Albany	Georgia
Georgia	Brad	Williams	First Assembly	Albany	Georgia
Hawaii	Gilbert	Lauai	Paradise Chapel	Waianae	Hawaii
Hawaii	Desmond	Vaovasa	Samoan Assembly	Waipahu	Hawaii
Hawaii	Woodrow	Vaovasa	Samoan Assembly	Waipahu	Hawaii
Indiana	Jason	Blake	First Assembly	Greenfield	Indiana
Indiana	James	Carlisle	First Assembly	Richmond	Indiana
Indiana	Billy	Chamness	First Assembly	Richmond	Indiana
Indiana	D. J.	Cleveland	First Assembly	Richmond	Indiana
Indiana	Chris	Devore	First Assembly	Greenfield	Indiana
Indiana	Anthony	Gootee	Calvary Temple	Indianapolis	Indiana
Indiana	Chris	Hill	Lighthouse Assembly		Indiana
Indiana	Gillis	King	First Assembly	Richmond	Indiana
Indiana	William	McFarland	First Assembly	Richmond	Indiana
Indiana	Brian	Senne	First Assembly	Greenfield	Indiana
Indiana	Johnny	Stanley	First Assembly	Greenfield	Indiana
Indiana	Sean	Vinson	First Assembly	Greenfield	Indiana
Indiana	Daniel	West	First Assembly	Greenfield	Indiana
Iowa	J. R.	Dougherty	Dysart Assembly	Dysart	Iowa
Iowa	Jason	Hoyt	Dysart Assembly	Dysart	Iowa
Iowa	Ryan	Hoyt	Dysart Assembly	Dysart	Iowa
Iowa	Adam	Smith	Harvest Assembly	Huxley	Iowa
Iowa	Danoe	Twiford	First Pentecostal Assembly	Ottumwa	Iowa
Louisiana	Jeff	Akers	North Lake Assembly	Covington	Louisiana
Michigan	Andy	Kroll	Beaver Lake Community Church	Lachine	Michigan
Michigan	John	Williams	Beaver Lake Community Church	Lachine	Michigan
Nebraska	Justin	Douty	Assembly of God	Milford	Nebraska
Nebraska	Danny	Hershberger	Assembly of God	Milford	Nebraska
Nebraska	Caleb	Nance	Assembly of God	Milford	Nebraska

New Jersey	Timothy	Franks	Beckett Assembly	Swedesboro	New Jersey
New Mexico	Brent	Corder	Bethel Assembly	Hobbs	New Mexico
New Mexico	Jeff	Ray	Bethel Assembly	Hobbs	New Mexico
New York	Zachary	Povec	First Assembly	Marcy	New York
Northern California/Nevada	Michael	Branch	Trinity Community	San Rafael	California
Northern California/Nevada	Jordan	Leytem	Calvary Temple	San Leandro	California
Northern California/Nevada	Jeremiah	Rounsiville	Neighborhood Bible Church	Sacramento	California
Northern California/Nevada	Jeremy	Seielstad	First Assembly	Chico	California
Northern California/Nevada	Sean	White	First Assembly	Chico	California
Northern California/Nevada	Seth	Whittemore	First Assembly	Chico	California
Northern Missouri	Matt	Bundy	St. Charles Assembly	St. Charles	Missouri
Northern Missouri	Michael	Debroeck	Assembly of God	St. Peters	Missouri
Northern Missouri	Richard	Etter	Bethel Assembly	Chillicothe	Missouri
Northern Missouri	Nicholas	Johnson	Assembly of God	St. Peters	Missouri
Northern Missouri	Andrew	Scott	Assembly of God	St. Peters	Missouri
Northern New England	Matthew	Buehl	Praise Assembly	Tilton	New Hampshire
Northern New England	Steven	Corum	Plymouth Assembly	Plymouth	New Hampshire
Northern New England	Timothy	Corum	Plymouth Assembly	Plymouth	New Hampshire
North Texas	David	Trower	First Assembly	Waco	Texas
North Texas	Michael	Espin	Victorious Life Assembly	Waco	Texas
North Texas	Joshua	Hicks	Victorious Life Assembly	Waco	Texas
Northwest	Christopher	Barrans	Assembly of God	Renton	Washington
Northwest	Matthew	Barrans	Renton Assembly	Renton	Washington
Northwest	Jason	Churchwell	Evangel Temple	South Praire	Washington
Northwest	Marc	Keefer	Assembly of God	Waterville	Washington
Northwest	Jesse	Palmer	Mountain View Assembly	Arlington	Washington
Northwest	Shane	Scott	Neighborhood Christian Center	Bremerton	Washington
Northwest	Russell	Silva	Christian Worship Center	Camp Union	Washington
Northwest	Sam	Stol	Assembly of God	Orting	Washington
Northwest	Levi	Sullivan	Valley Christian Center	Lewiston	Idaho
Northwest	Matthew	Toro	Christian Worship Center	Bremerton	Washington
Northwest	Ryan	Turner	Assembly of God	Waterville	Washington
Northwest	James	Wood	Evangel Temple	South Prairie	Washington
Ohio	Jon	Mason	Christian Life Center	Cincinnati	Ohio
Ohio	Eric	Westrich	Chagrin Valley Assembly	Orange Village	Ohio
Oklahoma	Jordan	Huett	First Assembly	Chickasha	Oklahoma
Oklahoma	Chad	Jobe	First Assembly	Chickasha	Oklahoma
Oklahoma	Jack	Jones II	Provence Assembly	Ardmore	Oklahoma
Oklahoma	Dusty	Pember	Grace Assembly	Oklahoma City	Oklahoma
Oklahoma	Gary	Willis	First Assembly	Chickasha	Oklahoma
Oregon	Josh	Benson	Forest Grove Assembly	Forest Grove	Oregon
Oregon	Timothy	Harms	Assembly of God	Forest Grove	Oregon
Oregon	Lu	Hughes	Forest Grove Assembly	Forest Grove	Oregon
Oregon	Travis	Timmons	Forest Grove Assembly	Forest Grove	Oregon
Pennsylvania/Delaware	Michael	Morris	Calvary Assembly	Du Bois	Pennsylvania
Pennsylvania/Delaware	Andy	Beach	Gospel Tabernacle	Mt. Morris	Pennsylvania
Pennsylvania/Delaware	John	Engel	New Life Assembly	Grantville	Pennsylvania
Pennsylvania/Delaware	Jason	Hansford	Chapel on the Hill	Emlenton	Pennsylvania
Pennsylvania/Delaware	Aaron	Kohler	New Life Assembly	Grantville	Pennsylvania
Pennsylvania/Delaware	Jason	Kroptavich	Peckville Assembly	Peckville	Pennsylvania
Pennsylvania/Delaware	Nathan	Kroptavich	Peckville Assembly	Peckville	Pennsylvania
Pennsylvania/Delaware	Clifford	Kurten	Calvary Assembly	Du Bois	Pennsylvania
Pennsylvania/Delaware	Jonathan	Landis	Pleasant Valley Assembly	Brodheads ville	Pennsylvania
Pennsylvania/Delaware	Joshua	Mendoza	Pleasant Valley Assembly	Brodheads ville	Pennsylvania
Pennsylvania/Delaware	Joshua	Mertz	El-Shaddai Assembly	Nazareth	Pennsylvania
Pennsylvania/Delaware	Corey	Richardson	First Assembly	New Castle	Pennsylvania
Pennsylvania/Delaware	Shawn	Shevitz	First Assembly	New Castle	Pennsylvania
Pennsylvania/Delaware	William	Shevitz	First Assembly	New Castle	Pennsylvania
Pennsylvania/Delaware	Jared	Squires	Gospel Tabernacle	Mt. Morris	Pennsylvania
Pennsylvania/Delaware	Brendon	Buck	Calvary Assembly	Du Bois	Pennsylvania
Pennsylvania/Delaware	David	Tice	Pleasant Valley Assembly	Brodheads ville	Pennsylvania
Peninsular/Florida	Markus	Zimmerman	Glad Tidings Assembly	St. Petersburg	Florida
Potomac	Curtis	Cassell	Cathedral of Praise	Danville	Virginia
Potomac	John	Harrigan	Cathedral of Praise	Danville	Virginia
Potomac	Reed	Horanburg	Assembly of God	Fairfax	Virginia
Potomac	Ryan	Horanburg	Assembly of God	Fairfax	Virginia
Potomac	Timothy	Morgan	West End Assembly	Richmond	Virginia
Potomac	Anthony	Raduano	Bethel Assembly	Hagerstown	Maryland

Potomac	H. Van	Smith	Cornerstone Church Assembly	Richmond	Virginia
Rocky Mountain	Michael	Goodman	First Assembly	Aurora	Colorado
Rocky Mountain	Jared	Maccarone	First Assembly	Aurora	Colorado
Rocky Mountain	Derek	Schauer	First Assembly	Aurora	Colorado
South Carolina	Tim	Burrows	Joanna Assembly	Joanna	South Carolina
South Carolina	Joshua	Chilton	Joanna Assembly	Joanna	South Carolina
South Carolina	Jonathan	Scogin	Joanna Assembly	Joanna	South Carolina
Southern California	Joseph	Detjen	Glad Tidings Assembly	Hanford	California
Southern California	Michael	Dey	Assembly of God	Lemoore	California
Southern California	John	Tate	Life Center Assembly	Lakewood	California
Southern Idaho	Jon	Clare	Christian Faith Center	Nampa	Idaho
Southern Idaho	Eric	Dammann	Cornerstone Assembly	Idaho Falls	Idaho
Southern Missouri	Matthes	Duclos	James River Assembly	Springfield	Missouri
Southern Missouri	Troy	Farris			Missouri
Southern Missouri	Eddie	Kirsch			Missouri
Tennessee	Benjamin	Lewis	First Assembly	Kingsport	Tennessee
Tennessee	Scott	Tollett	Trinity Tabernacle	Crossville	Tennessee
West Florida	Scotty	Scarborough	Callaway Assembly	Panama City	Florida
West Florida	Bryan	Thompson	Callaway Assembly	Panama City	Florida
West Florida	Jared	Wells	Callaway Assembly	Panama City	Florida
Wisconsin/Northern Michigan	Dan	Gokey	Calvary Assembly	Milwaukee	Wisconsin
Wisconsin/Northern Michigan	Dominic	Manna	Calvary Assembly	Milwaukee	Wisconsin
Wisconsin/Northern Michigan	Tony	Manna	Calvary Assembly	Milwaukee	Wisconsin
Wisconsin/Northern Michigan	Joel	Woppert	Calvary Assembly	Milwaukee	Wisconsin

Continued from page 3

Jesse couldn't imagine how powerful God's promise was and how much God loved Abraham. *Wow*, Jesse thought, *God gave Abraham as many children, grandchildren, and great, great, great, great grandchildren as there are stars in the sky. Boy, God sure loved Abraham.*

About that time a loud "POP" from the crackling campfire startled Jesse, just in time to hear his commander say: "Boys, you know that God loves us so much that He created the stars above for us to look at. In the beginning God created the heavens and the earth out of nothing. He spoke life into being and created man."

The commander opened his Bible. The light from the campfire glistened against its black, shiny cover. Then the commander continued to speak: "In John 1:1 the Bible states, 'In the beginning was the Word, and the Word was with God, and the Word was God. He was with God in the beginning.'

"You know what that

means, boys?" the commander asked as he lifted his head and looked around the circle of boys. "Jesus is the Word of God, and He was with God when the heavens and earth were created.

"I can almost see God looking at His only Son Jesus during that happy time. God the Father and Jesus the Son were probably filled with excitement as they thought of how men, women, and children would one day enjoy the wonders being created.

"I can imagine a tear trickling down God's face as He looked His Son deep in the eye, both realizing that one day Jesus would have to suffer a cruel death on a cross so that man could have forgiveness for his sins."

The commander paused briefly as silence filled the air. "But I can also imagine the pain was quickly swept away as they joyfully saw into the future—those who have accept Christ as Savior joining them in heaven as praise fills the air *for eternity!*

"Then, boys, I can imagine that on creation day God brushed the tear from His eye, grinned from ear to ear, and said, 'Son, watch this!' With that God stretched out His mighty hand and slowly moved it across a blackened sky. With His hand still in midair, He looked at Jesus. With a twinkle in His eye and a smile on His face, He probably said, 'The children will love these, won't they.'"

The commander was pointing to the beautiful stars above as he waved his hand slowly against the sky—just as God must have done. Then softly the commander whispered, "Boys, that's just how much the Lord loves you ... and me."

With that Jesse knew he would *never* again take the stars for granted. He lifted his head toward the heavens and smiled. About then a star overhead twinkled. It was as if the twinkle in God's eye could be seen as the words came to Jesse's mind: "Jesse, I love you ... *Never* forget it."





Balloon Staging: The Fun of Discovery

Reprint courtesy of NASA (National Aeronautics and Space Administration)

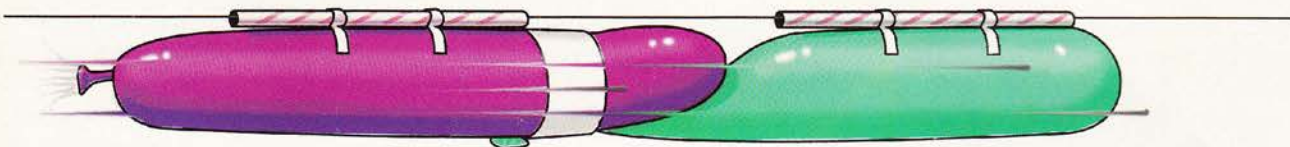
Objective: To demonstrate the principle of rocket staging.

Description: In this activity, Rangers simulate a multistage rocket launch using two inflated balloons that slide along a fishing line by the thrust produced from escaping air.

Procedure:

1. Thread the fishing line through the two straws. Stretch the fishing line snugly across a room and secure its ends. Make sure the line is just high enough for people to pass safely underneath.
2. Cut the coffee cup in half so that the lip of the cup forms a continuous ring.
3. Loosen the balloons by preinflating them. Inflate the first balloon about three-fourths full of air and squeeze its nozzle tight. Pull the

nozzle through the ring. While someone assists you, inflate the second balloon. The front end of the second balloon should extend through the ring a short distance. As the second balloon inflates, it will press against the nozzle of the first balloon and take over the job of holding it shut. It may take a bit of practice to achieve this.



4. Take the balloons to one end of the fishing line and tape each balloon to a straw. The balloons should be pointed along the length of the fishing line.
5. If you wish, do a rocket countdown and release the second balloon you inflated. The escaping gas will propel both balloons along the fishing line. When the first balloon released runs out of air, it will release the other balloon to continue the trip.

Travelling into outer space takes enormous amounts of energy. This activity is a simple demonstration of rocket staging that was first proposed by Johann Schmidlap in the 16th century. When a lower stage has exhausted its load of propellants, the entire stage is dropped, making the upper stages more efficient in reaching higher altitudes. In the typical rocket, the stages are mounted one on top of the other. The lowest stage is the largest and heaviest. In the space shuttle, the stages are attached side by side. The solid rocket boosters are attached to the side of the external tank. Also attached to the external tank is the shuttle orbiter. When exhausted the solid rocket boosters are dropped. Later, the external tank is dropped as well.



Materials and Tools

- 2 Long party balloons ("airship")
- Nylon monofilament fishing line (any weight)
- 2 Plastic straws (milkshake size)
- Styrofoam coffee cup
- Masking tape
- Scissors



NASA

The Space Shuttle Quest

by Chuck Goldberg

You've heard of the space shuttle, but how much do you really know about it?

If you're like most, the launch you know best is the one that ended in disaster—the explosion of the shuttle *Challenger* in 1986. Just 73 seconds after liftoff, all 7 crew members died.

But the shuttle program has actually existed since the 1970s, with the first flight in 1981. Twenty-four successful trips were made before the explosion, and 66 in all through 1994. A total of five shuttles have seen service: *Columbia*, *Challenger*, *Discovery*, *Atlantis*, and *Endeavour*—all named after famous oceangoing ships.

From Liftoff to Descent

Where the crew members live and work is called the orbiter, the part of the shuttle that looks like an oversized

airplane. The shuttle is about 184 feet long, 76 feet high to the tip of the orbiter's vertical tail, and 78 feet wide measuring across the orbiter's wingtips. Liftoff weight is usually about 4.5 million pounds—a lot of weight to force into orbit!

Propelling the shuttle from the launchpad are the orbiter's three engines and two booster rockets, producing about 7.3 million pounds of thrust.

After 2 minutes the shuttle is 32 miles

high and no longer needs its boosters, which parachute into the ocean. Two waiting ships pick them up for future missions.

Missions (flights) once lasted 4 to 7 days but now can go up to 16 days or longer. As the orbiter nears earth, it cuts off its main engines and drops an external tank into the ocean.

Other engines are fired to place the vehicle in a near-circular,

low-earth orbit. Later the orbiter glides to an unpowered landing on one of the world's longest runways—about 15,000 feet. The landing has to be perfect because the shuttle is not able to circle and try again.

What It Does

The shuttle is sometimes called a workhorse because it can do so many things. It's a delivery system, launching satellites into space for the U.S. government or for private companies. The orbiter is a repair shop for damaged orbiting weather and communications satellites. The

crew can either pick them up and return them to earth, or repair

them on board and launch them back into space.

It's cheaper to launch a satellite from the shuttle than from a rocket, so cargo space for communications satellites is reserved years in advance. The shuttle is also a science research lab for experiments of all kinds.

The Crew and Its Work

The basic shuttle crew consists of a commander, a pilot, a mission specialist, and a payload specialist. The commander and pilot are in charge of the flight, while the other two concentrate on scientific matters.

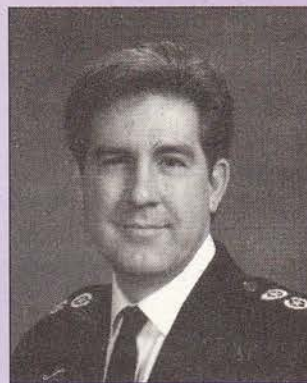
The mission specialist is a scientist responsible for experimental data and housekeeping. The payload specialist is a nonastronaut scientist, engineer, or doctor. Though all play different roles, the shuttle crew must all work together for the mission to be successful.

The crew works in the flight deck, the shuttle's control center. There are two sets of controls for the commander and pilot, four seats, and wraparound windows.

In the back of the flight deck, the mission specialist manages the flight using a computer keyboard and system monitors.

The payload specialist controls each payload in the cargo bay, which is big enough to hold





Marshall Bruner
National Public Relations
Coordinator

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One-on-One

I've long had a fascination with astronomy. One of my favorite pastimes is gazing at the stars—especially the moon. (I think it sad that people often get too busy to step outside and admire God's wonderful creation above or that they cannot see the beautiful night sky because of city lights.) I become at peace with God when staring at the stars because I'm quickly reminded of His majesty. In those moments I realize the power of our awesome, mighty God whose words alone formed creation out of nothing.

I echo the words of the Psalmist, "When I consider your heavens, the work of your fingers, the moon and the stars, which you have set in place, what is man that you are mindful of him, the son of man that you care for him?" (Psalm 8:3, 4, NIV).

Perhaps you recall the summer 1990 *High Adventure Leader* article by Richard Hammar, who wrote "Our Wondrous Heavens." The Andromeda Galaxy alone boggles the mind: It's "... a 'neighboring' island of 200 billion suns lying 2 million light years (13 quintillion miles) from our Milky Way Galaxy. Our fastest spacecraft would take 150 billion years to reach it. If you counted one of its stars each second since the birth of Christ, you would have counted less than a third of its total." He continued by stating that our galaxy is similar in size and shape to the Andromeda Galaxy. The Milky Way Galaxy "contains nearly 300 billion suns—only 6,000 can be counted with the unaided eye."

How can we ever doubt God's ability to provide for our needs? Yet we doubt all the time. "Lord, forgive us of our unbelief!"

The next time you doubt God's ability to provide for your needs, look into the heavens. The next time you take your Rangers on a camp-out, share with them about the wonders above. God created it all for us.

This issue deals with scientific accomplishments of man. It is only fitting we explain to our Rangers about the marvels of God's creation. Boys need to hear about the compelling, indescribable, unthinkable love that God displayed when creating the heavens and the earth and mankind, then sending His only begotten Son to die on a cross ... for us.

In the beginning when God created the heavens and the earth, He turned chaos, emptiness, and darkness into order, beauty, and life by *speaking creation into existence*. Likewise, we have the God-given ability to speak order, beauty, and life into a chaotic world—by sharing Jesus Christ, who is the resolve.

There we have it: 1) the *creation* God lovingly provided His children, 2) the *power* of God displayed by creating the world for us and giving His Son to us, 3) the *resource* of God's power available to us in Christ Jesus. Let's not keep this good news to ourselves. Let's proclaim it to our outposts, to our communities, and to the uttermost parts of the world.

We may never fly in the space shuttle, but we can always look to the stars God created and soar to heaven through our prayers!

"To the Lord your God belong the heavens, even the highest heavens, the earth and everything in it" (Deuteronomy 10:14, NIV).

—Marshall Bruner, National Public Relations Coordinator

National Office Beefs Up Training

No doubt: Royal Rangers is effective when leaders are well-trained. One of our top priorities in recent months has been to adjust our training methods to better equip our national training staff as well as the local outpost commanders.

Advanced National Training Camp: The Advanced National Training Camp format has undergone a change to provide more hands-on training. On August 24-27 we held our first ANTC at Camp Geronimo, near Payson, Arizona, using the new format. There 70 trainees participated in courses such as "Compass and Map," "Advanced Camping

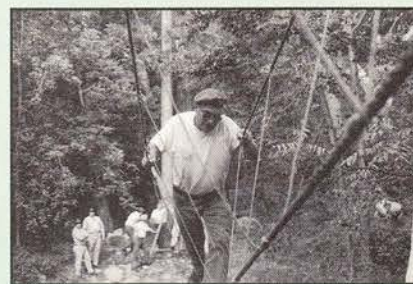


Techniques," "Pioneering," "Cooking," and "Pageantry." The major revision was that students were given opportunity to apply the skills being taught instead of just receiving instructions in a classroom setting. The entire camp was shortened 1 day, while more hours of actual training were accomplished.

Both trainees and staff alike stated that the camp was a success. Trainees left feeling they were equipped to better lead their local outposts.


Urban Leadership Conference: The New York District and the national Royal Rangers Office cosponsored the Urban Leadership Conference, held in New York City, September 15-17. The conference served as the prototype of National Urban Leadership Conferences that will be held nationwide beginning in 1996.

Trainees participated in workshops designed for urban leadership—"Understanding the Urban Family," "Dealing With Substance Abuse," "Peer Pressure and Teen Suicide," "Discipline and Conflict Management," "Legal Realities,"



"Values and Ethics," "Medical Concerns," and "The Urban Commander of Today." One highlight of the conference was an urban tour into the inner-city areas of Harlem, Bronx, Brooklyn, and downtown New York City. Trainees were able to witness and hand out *The Book of Hope* during the urban tour. They also met with urban pastors to learn first-hand of the unique needs of the youth in those inner-city areas.



Soon the national office will be distributing training information to district commanders to encourage them to hold National Urban Leadership Conferences in their inner cities. Training, coupled with new curricula prepared by the national office, has become a primary focus of Royal Rangers as we endeavor to evangelize urban America. 

Eurocamp Gathers Over 2,000 Campers

August 1-5 marked the second Eurocamp, held at Mariager, Denmark, where 2,200 campers from 15 nations converged to celebrate Royal Rangers.

Commander Bob Posey, of Oklahoma City, and National Deputy Commander Paul Stanek served as U.S. representatives at the Eurocamp.

"One of the things I most enjoyed was the Market Place,"

stated Posey. "Every event was held around the Market Place. It consisted of a large tent erected in the center of activities. The activities consisted of singings, a bull whip demonstration, and even





'Swiss wrestling.' Also, there were demonstrations on how to make torches, tent spikes, sandals, hats, beads, T-shirts, and do basket weaving.

"The Czech Republic was weaving felt to make backpack rope. The French were demonstrating how to make crepes suzettes. The Netherlanders were making silk tulips. Rangers were being taught how to juggle and how to make an ink pen from a stick."

When asked how the Eurocamp differed from our National Camporama, Posey replied, "They held day services with a theme for each day. The first day was 'The Creation.'


Various foreign delegations conducted the services, emphasizing the theme of that day. The evening services were similar to our Camporama, where a skit is performed each night."

Posey stated that the events were English translated into German or German translated into English. Translators also translated the day and evening services into their native language.

"I was impressed by the many different cultures represented, but they were all Royal Rangers who worked to understand all the cultural differences and work together.

"One of the things I found unusual was that delegates were assigned to visit other delegation encampments—that is, an entire delegation would visit another delegation's encampment. Delegates would sing and share to other delegates. Also, they

would share their cultures' food, music and customs.

"I did notice a lot of excitement among the commanders in that Royal Rangers is being used as a missions outreach to other formerly communistic nations—such as Russia and Romania. One commander was telling me that Royal Rangers was growing so fast in his community that men who were not Christians were approaching them, wanting to become commanders. They were told that they first must become Christians, then become commanders," stated Posey. 



News Briefs

On-Line Prayer Requests: The Assemblies of God Prayer Center is now receiving prayer requests via E-mail. Our Intercessory prayer network is growing and there will be many prayer intercessors praying for these needs. God is able! The Prayer Center E-mail address is prayer@ag.org.

Royal Rangers Turning Point: Five commanders recently traveled to Chattanooga, Tennessee, and completed Phase 2 of their Royal Rangers Turning Point training. Those commanders are as follows: Jim Dougherty, Iowa; Dean Smith, Minnesota; Edwin Hazard, New York; Ralph Williams, South Texas; and David Craun, Louisiana.

Once they complete their intensive training, they will be the first ever district and/or regional commanders to become certified Royal Rangers Turning Point instructors.

Our Goals:

1. To train a select group of regional and district commanders to become certified Royal Rangers Turning Point instructors.

2. For those certified Turning Point instructors who are national, regional, or district representatives to conduct Royal Rangers Turning Point Seminars. These seminars are to be conducted at a) local outposts, and b) district and regional conferences.

3. To train *all* commanders how to help Rangers avoid and/or overcome life-controlling problems. This will be accom-

plished through the following approaches:

- *Educate outpost commanders:* Certified instructors will schedule seminars in cities and towns where outpost commanders from several churches can attend Royal Rangers Turning Point Seminars.

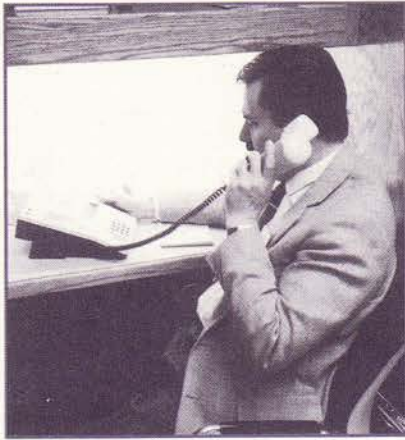
- Educate regional, district, divisional, sectional, and area commanders and all Royal Rangers certified instructors about the role of Turning Point and *Insight Group* curricula by conducting Royal Rangers Turning Point Seminars at regional and district conferences.

Do you want to learn more about helping boys live overcoming lives? Do you desire to become a more dynamic commander? If so, contact your dis-

continued on pg. 5

God

Does Answer Prayer



by Rev. Dennis Whaley

I'll never forget how thrilled I was to finally attend the National Training Camp. The grand event was held spring 1988 at the National Royal Rangers Training Center, Eagle Rock, Missouri.

I had been in Royal Rangers since I was 8 years old. My father had taken me to hear National Commander Johnny Barnes, now deceased, at a Houston sectional Father-Son Banquet, where the challenge of the Rangers programs ignited my dad, my pastor, and four other men to begin Outpost 2 in the South Texas District. As a result, the Royal Rangers program was a life-long commitment.

So now, after several years of leadership in various churches and sections, I finally was going to Eagle Rock for

NTC. Little did I realize that after I had mailed in my registration and secured the date, I would find out that I would have to begin chemotherapy for Hodgkin's Disease (lymphoma cancer).

In 1984 I had taken radiation therapy for my condition. God was so merciful. It was caught early, and after minimal treatment I responded well and was released from the doctor's care. But now it had reoccurred, and the aggressive chemotherapy treatment had to begin immediately.

I sincerely prayed, and against many people's advice I scheduled my first treatment on Monday so I could attend NTC on Thursday. It was the best decision I had ever made!

When I arrived on the campgrounds, I had a doctor's release to give to Commander Paul Stanek. I was placed in the "Buffalo Patrol," along with seven of the greatest men that ever hiked those Eagle Rock campgrounds.

My tent buddy was Stan Weston from Roseau, Minnesota. The other men were Paul Watts, Tim Trower, John Wampler, Bill Voyles, Jim Valkovich, and Jim Zatt. The only one I told of my condition was Stan. (Because of the possible side effects I could encounter, I felt he should know.)

Regardless of my condition, I went through the daily routine, determined to finish NTC. I realized that it might be the last camp-out I could experience, and I wanted to be successful.

On Friday night Commander Johnny

Barnes challenged us to carry our "light" back to our cities and towns and to win boys for Christ. As we stood around that campfire, he asked for a show of those who wanted God's anointing and a double portion of God's Spirit. Several of my patrol buddies went forward. Then, to my surprise, he recognized me as a cancer patient and asked the men to gather around me and pray.

I'll never forget the absolute freedom we felt in the Spirit. As they prayed I determined that with God's help, and the prayers of these men, I would be healed!

It didn't end there. We went back to our tents singing. While around our patrol fire, one of our patrol members received the baptism in the Holy Spirit.

NTC ended, but what God had done for me there will never end. From that night on my patrol brothers would call, write, and pray for me. Sometimes in my weakest state I'd get a call from Paul or Tim. They would say that they were praying for me. John wrote a letter and said that while skydiving, he thought of me and said a prayer.

How could I forget the NTC and my night of victory?

After 13 weeks off and on in the hospital, 6 months of


chemotherapy, a stroke, a blood clot, and numerous side effects, God healed me of cancer. The doctor released me from checkups 5 years later.

Today there are no outward signs of the disease I had fought. Now every Monday and Tuesday I answer the phones at the National Prayer Center, at the General Council Headquarters, praying for others to receive a healing touch from the Lord. The 1-800 4-PRAYER is a life-line I enjoy sharing with others. Anyone

can call in a prayer request.

I am convinced that the prayer of agreement from Commander Barnes and the Buffalo Patrol, coupled with the brotherly encouragement at NTC, was what I needed.

When I returned to Eagle Rock for the 1994 Camporama, I stood among 4,000 boys and men and remembered my miraculous evening during the NTC of 1988. It was a moving experience to see the hundreds of boys at the altar, which let me know there is no other ministry for men and

boys like Royal Rangers. 

Editor's Note:

Rev. Whaley became involved in Royal Rangers at age 8. He now serves as minister of ministries and as Trailblazers commander at Praise Assembly, Springfield, Missouri. From Royal Ranger to commander, his love for the Rangers ministry has never wavered. Today he proudly wears the commander's uniform—a testimony of his love for Rangers and God's healing mercies on his life.

From the National Prayer Center

Dear Sir:

This spring I called to request prayer for my son John, who had Grave's Disease and was having a difficult recovery. He had been ill for the last 2 years. Many others were praying for him also, including his Royal Rangers leaders: Darren Tippitt, Jim Jinks, and David Gideon.

John is markedly better now, and I am enclosing a photograph of him taken during the Oklahoma City [Royal Rangers] ceremony, where he received his Gold Medal of Achievement [one of the highest Royal Rangers awards earnable]...

Thank you for your prayers ... and keep the prayer line open.

Sincerely,
John's mother, Joyce Wilson Dalgarn



*Front: Tim Hopkins, Robby Taylor, John Dalgarn, Jr.
Back: James Eubanks, Oklahoma District commander.*

NEWS

continued from pg. 3


district commander and tell him you wish to attend a Royal Rangers Turning Point Seminar.

We're On-Line

Our office is now on-line and can be reached through computer

E-mail. Our computer address is Rangers@ag.org. Soon we will be sending our promotional material through America ON-Line, accessible through the World Wide Web. Be looking for further details!

1996 National Rendezvous

Earmark your calendar for the 1996 National Rendezvous. The grand event will be held July 15-19, 1996, at Camp Eagle Rock, Eagle Rock, Missouri. The cost is minimal—\$50 Old-Timers, \$40 Young Bucks. 



by John Eller,
national dispatcher

Straight Arrows

Overall Approach: This quarter's theme is "The Sciences." You will want to help your boys think of specific situations. Plan for displays, posters, and demonstrations that will help your boys visualize the challenges before them. Remember the three ways we learn: seeing, hearing, and doing. Make sure your additional information and instructions are correct, since we are informing young minds that will retain this information for many years to come.

March

1st Week-ABC's: List on a chalkboard the letters of the alphabet. Then ask the boys to come up with words that sound like each alphabet letter. For example, "B" sounds like "be" or "bee," and "C" sounds like "see" or "sea." Explain that words that sound alike but are spelled differently are called *homophones* or *homonyms*. Display a golf tee and a cup of tea. Display word cards like "IN" and "INN," and discuss the origin of the word and what makes that word distinctive in meaning. Explain that man is distinctly and uniquely created. Involve the boys in a discussion on how various items came into being. Discussion Questions: What part did God play in each of these? What part did man play? Which is most important?

2nd Week-Clothing: Bring several different kinds of cloth to this meeting—such as wool, cotton, silk, etc. Discuss where these materials came from. Ask, "What are your clothes made of?" Check labels on the necks of shirts and the pockets of

jeans. Discussion Questions: What are carpets and drapes made from? Are some things made from a mixture of materials—like rayon and polyester—are man-made. Who gave man the knowledge to do this?

3rd Week-Word Games: Give each boy a scrap of paper, and assist the boys in writing down the name of an object—such as tent, fire, flag, etc. Ask them to keep it secret from the rest. Now have two boys at random combine their papers, putting their words together. Did the words combined make a compound word, or did they sound funny or odd? Repeat this game with different boys. When the compound word makes an object, do a rough drawing on the overhead or chalkboard—examples: treebed, flagship, dishwasher, etc.

4th Week-Imagination: Using poster board, draw several objects that could be improved—here are some humorous ones: a drinking glass that will not tip, a bat that will never break, etc. Ask the boys to suggest things that could be improved. Ask questions like, "Do you think people would buy what is improved?" Next, have the boys name some things that do not need improvement. Can you improve milk or bread?

April

1st Week-Riddles: This is the week for riddles. Create several, "What am I?" riddles from your meeting room surroundings. Example: "Some people find me easy to break, but I think I'm pretty sharp! What am I?" Answer: glass.

2nd Week-Amazing Accomplishments: Discuss some of man's amazing accomplishments. Prepare beforehand by researching through the encyclopedia. For example, discuss the attached *High Adventure* article on the space shuttle. Or you could obtain a library book on Michelangelo. Explain the difficulty he experienced

while painting the ceiling of the Sistine Chapel. (He had to lie on his back on a scaffold using wet plaster.) Discussion Questions: Was Michelangelo a dedicated artist? Why did he work so hard? Did he do other things? (Yes, he worked with marble to create statues.) What is hard for you to do?

3rd Week-Shapes: Using various colors of construction paper, instruct the Straight Arrows to cut out a variety of shapes. Next, have the boys bring their paper to a table and see what large object they can make. (You might add a few more pieces.) Is this a good way to make a jigsaw puzzle? How would you have cut the paper differently?

4th Week-Compliments: Ask, "Do you know what a compliment is? Write on a chalkboard the names of persons each boy would like to compliment—dad, mom, pastor, commander, etc. Discuss the following: What would you say nice about that person? Have you ever said, "Thank you!" to her or him? Why would you compliment this person? Do you see him or her often? Is he or she easy to talk with? Read Scripture verses that would relate to complimenting one another. Involve the boys in a game, like basketball, and encourage them to compliment each other when they make good plays.

May

1st Week-Descriptions: Display some of the following on a table: eraser, typewriter, clock, paper clip, stapler, ballpoint pen, etc.

Ask each boy how he would describe one of the items displayed to someone who did not know what it was. Discussion Questions: Why are these items important? Are they easy to make?



Where do you get them? What could be used in place of these things? Are these things mostly at home, school, or the office?

2nd Week-Word Shapes:

Illustrate on a chalkboard how to form objects using the letters of a word. Example: Write the word *BOX* in the shape of a box. Write the word *PHONE* in the shape of a telephone. Give each boy sheets of colored construction paper and a pencil to do their own. Let the boys cut out their shapes—using rounded scissors—and decorate the meeting room with their word shapes.

3rd Week-Descriptions:

Ask for a volunteer to stand in front of the group. Ask, "What words describe this person?" Using a chalkboard, list in one column the words that describe the boy. Then have another boy come forward and repeat the process. List those descriptive words in the next column. Compare what words are alike by drawing lines from one column to the next. Next say, "Let's see how we are all alike in some ways and different in other ways." Ask everyone to stand. Read a list of the words after stating, "If the word describes you, stay standing. If it doesn't, sit down and remain seated. See how long it takes for everyone, except the volunteers, to sit down."

4th Week-Rules:

Explain that everyone has rules to go by. Describe why rules are important—for safety, for our physical or spiritual well-being, etc. Then involve the boys in the following questions: What are your rules at home? Do you always follow them? What happens if you break a rule? Do you have rules at school? Which one would you change if you could? Does God have rules? What happens if we break God's rules? Are His rules important? Where do we find God's rules?

5th Week-Show & Tell:

Have each boy bring two of his favorite toys to this meeting. Display the toys on a table. Have each boy briefly describe the toys and why they are his favorite. Then involve the boys in a discussion: Are these toys any good?

How would you change them to make them work better? What kind of toys would you like to see invented? (Make a rough drawing of their suggestions on the chalkboard.) Do you think toys are important? If you could have any toy, which would you choose?

Buckaroos

Overall Approach: Your boys are curious about how things work. Science is a big mystery to be explored. Use their interest as your inspiration this quarter. Be sure to allow time for related questions and side bars. At this age, your boys may learn more by accident than they will learn on purpose at a later age. Teach them while you can!

March

1st Week-Cloud Types: Write the following words on a chalkboard: 1) cirrus 2) cirrostratus, 3) cirrocumulus, 4) altostratus, 5) altocumulus, 6) stratocumulus, 7) nimbostratus, 8) cumulus 9) cumulonimbus, and 10) stratus. Use a *Webster's Collegiate Dictionary* to define and discuss each cloud type. Also, discuss what causes thunderstorms and tornadoes and how to prevent injury during storms.

2nd Week-Cloud Types: Three temperatures are important in weather: cloud (aloft), air, and ground temperatures. Illustrate on a chalkboard what precipitation would occur with the following Fahrenheit temperatures:

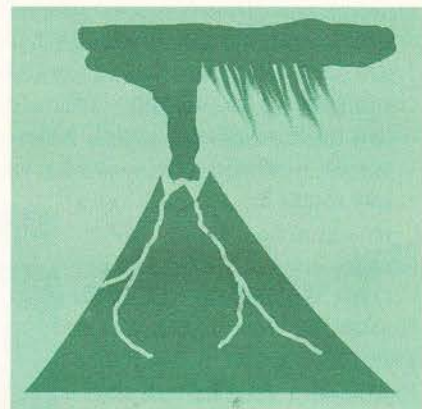
Aloft	Air	Ground
23°	23°	23° (snow)
40°	20°	20° (sleet)
40°	40°	40° (rain)
23°	40°	42° (rain)
40°	35°	15° (freezing rain)
40°	20°	40° (sleet then melt)

3rd Week-Education: Harvard University was founded in 1636. It was the first U.S. college. This week discuss the importance of education. Talk about some of the interesting scientific careers in which boys can become involved. Discussion Questions: Do you have to go to col-

lege to become a scientist? Can you be a scientist now? (Yes, a scientist is anyone who makes observations, collects information, and takes an interest in himself/herself and the world around him/her.)

4th Week-Earth Science:

Obtain a library book on volcanoes. Share information from the book with your Buckaroos. Distribute writing paper to each boy, and ask each boy to write a paragraph describing what he would do if a volcano would erupt. First, explain the following: The type of volcano, type of eruption, and topography of the area all affect what should be done in the event of an eruption.



April

1st Week-Light: Ask the boys to name four different sources of light—such as match, volcano, star, line electricity, battery electricity, kerosene, anything burning such as wood or paper. Explain the many reasons why we need light. Demonstrate various types of light. Involve the boys in a discussion on what life was like before electricity.

2nd Week-Words: This week discuss how words are formed. Prefixes to words are varied and can completely change the meaning of a word. The prefix "tele," for example, means far away (examples: telegraph, telephone, television). "Micro" means small (example: microwave). The word "phone" takes on a completely new meaning when attaching to it the prefixes "tele" or "micro."

3rd Week-Sounds: Acquaint

Your Outpost Planning Guide

your boys with sounds and echoes. Tell how these are used in measurements. Bats use echoes to determine distance. Sonar uses sounds to determine depth, primarily in water. The time elapse between thunder and lightning can be used to determine how far away a storm is located. Discussion Questions: What are some uses we have for sounds and echoes? What is the first sound you hear in the morning? Can you make sounds? What do they mean?

4th Week—Echo, echo, echo: Explain that an echo is the return of a sound you make. If echoes travel at 1,000 feet per second and you hear your sound return in 10 seconds, how far away is the mountain or wall that sends it back to you? (The answer is 5,000 feet. The sound has to go and come back.) Use an empty room to illustrate how echoes travel. Music takes on a whole new sound in an empty room.

May

1st Week—Booker Washington: Booker T. Washington was born in 1856. He worked in coal mines three-fourths of a year and attended school the remainder of the year. He became president of Tuskegee Institute, a trusted advisor to presidents Taft and Roosevelt and even wrote a book entitled *Up From Slavery*. How could you squeeze 9 months of learning into 3 months? Share about the importance of continued education and how one should never stop learning. Show encyclopedia photographs of some well-known colleges when discussing.

2nd Week—Discovery: Many scientists apply for patents for their discoveries. Explain what a patent is—a document created by the government which assigns the right to the inventor to make, use, and sell an invention. Discussion Questions: Why are patents important? What would you patent if you could do so? For craft time, let the Rangers make something unique, using construction paper or clay or wire.

3rd Week—Where Are We? Ask your local librarian for the lati-

tude of your city or town. Pretend it is night and point to the North Star—which can be drawn on a chalkboard. The North Star is always directly north at an angle with the northern horizon, which equals your latitude. For example, the latitude of St. Louis is 38.5 degrees north, and in St. Louis the North Star (Polaris) is 38.5 degrees above the northern horizon.

4th Week—North: The North Star indicates where north is if you live north of the equator. If you know where north is, can you figure out other directions? Give the Rangers a basic understanding of direction using the *Adventures in Camping* handbook.

5th Week—NASA: This week discuss the article appearing in the *High Adventure* titled "NASA: The Space Shuttle Quest." Next, ask the Rangers, "How many U.S. astronauts have died in space capsules or shuttles? (3 in *Apollo*: Grissom, White, and Chaffee; 7 in *Challenger*: Scobee, Smith, Resnik, Onizuka, McNair, Jarvis, and McAuliffe). Note that after both accidents, NASA improved safety regulations and procedures. Ask the boys, "What would your feelings be if you were an astronaut at the takeoff of a shuttle flight?"

Pioneers

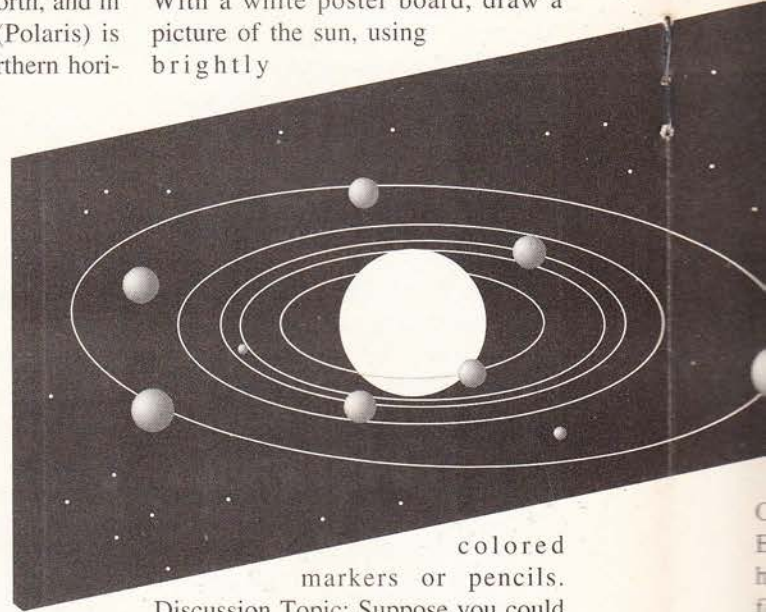
Overall Approach: Our aim this quarter is to assist your Pioneers in creative thinking in the world of space and related subjects. Remember that boys are excited by adventure and challenge and the vastness of air and space travel. Lead them to new discoveries in the ever-expanding world of knowledge.

March

1st Week—Our Solar System: Ask the boys: "Suppose you lived on another planet. Which one would you

choose? How would life be different if you could live there? Describe how the planet is different from Earth." Supply white paper and colors for boys to draw how their selected planets would look.

2nd Week—Our Solar System: With a white poster board, draw a picture of the sun, using brightly



colored markers or pencils. Discussion Topic: Suppose you could visit the sun. Give at least 10 words that would describe your visit. Would this be a fun trip? Why or why not? What kind of spaceship would you need?

3rd Week—Our Solar System: Ask your boys to imagine the sun stopped shining. What would happen? What would be affected by this change? (Human life, animal life, plant life, energy, etc.) Discussion Questions: Who made the sun to shine? Will the sun stop shining someday? What does the Bible say about this? (Read Matthew 24:29.)

4th Week—Our Solar System: Discussion Topic: Display a photo of the moon and planets. Imagine the moon were made of cheese and planets of other foods. Make a list of foods that might make up each planet. What do scientists believe the planets are really made of?

April

1st Week—Spacecraft: Discussion Topic: Suppose you discovered an abandoned spacecraft in your backyard. What would be the first thing

you would do? (Tell parents, call 911, call NASA, etc.) What would the spaceship look like? How large would it be? How did it get there? How would you get it back to its owner?

2nd Week—Flying High: Discussion Topic: Imagine you were flying a kite and it suddenly took you up above the clouds. What do you think our city looks like from the sky? Why do some people say the earth looks like a giant chessboard? Can you tell what things you are seeing from above? Do clouds get in your way when you try to look down? How can you tell the earth is round? Once you are up in the air, how would you get back down?

3rd Week—Our Night Sky: Obtain a book about stars or a "Night Bowl" from the local library. Explain how stars are arranged in the sky to form constellations. Supply each boy materials to draw an arrangement of stars for the night sky. Discussion Questions: Are star formations different below the equator? (Yes, the southern sky is totally different.) Using your imagination, what letters can stars make in the sky?

4th Week—Night Sky: Secure an enlarged map of the night sky. Have the boys suppose the night sky made dot-to-dot pictures. Point out a star formation that creates a house. Identify a formation that creates a picture of another object. Tell about the special star the Wise Men saw when Jesus was born.

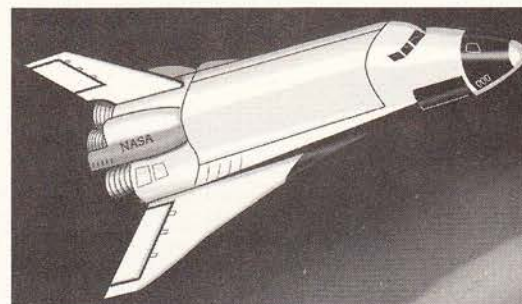
May

1st Week—Our Moon: This week discuss the moon by researching an encyclopedia. Show a picture, a map, or a globe of the moon. Explain man's first visit to the moon on July 20, 1969. Describe the moon's surface and atmosphere. If the moon is shining, let the Rangers view the moon through binoculars. Discussion Questions: How would you feel being on the moon looking at the earth.

What does "earth rise" mean? Is gravity different on the moon? Why is the moon so dusty? Why is the moon important? (earth tides).

2nd Week—Planets: Select a planet for discussion. Use an encyclopedia to research this planet. Discuss the planet at length and show pictures taken of the planet. Discussion Questions: What would it be like to camp on this planet? Would you need a fire for cooking? Would there be a place to store refrigerated items? What kind of equipment and supplies would you need to take? Would people back home be interested in what you saw?

3rd Week—NASA. This week discuss the article appearing in the *High Adventure* titled "NASA: The Space Shuttle Quest." Next, ask the Rangers, "How many U.S. astronauts have died in space capsules or shuttles? (3 in *Apollo*: Grissom, White,



and Chaffee; 7 in *Challenger*: Scobee, Smith, Resnik, Onizuka, McNair, Jarvis, and McAuliffe). Note that after both accidents, NASA improved safety regulations and procedures. Ask the boys, "What would your feelings be if you were an astronaut at the takeoff of a shuttle flight?"

4th Week—Sky View: Obtain a set of binoculars or a telescope for demonstration and discussion. If possible plan a star gaze. Tell the boys that many new stars were discovered after telescopes were invented. Ask if they are aware that Jupiter has 12 moons. Discussion Questions: Are there more stars we have not discovered? Are there more planets we don't know about?

5th Week—The Beginning: This week discuss the Book of Genesis and

how God created the heavens and the earth.

Trailblazers

Overall Approach: Keep in mind that the ideas listed below are intended to spark your imagination to expand into related areas of interest and excitement for your boys.

March

1st Week—Wind Velocity: Ever notice how a gentle breeze can make an otherwise unbearably hot day almost pleasant, or how a brisk wind in winter will send you scurrying for cover? The speed of wind can be measured, using a special instrument. Wind velocity is measured on a scale of 0 to 12, known as the Beaufort scale. It is named for Sir Francis Beaufort, an English rear admiral who devised this method of determining wind speed in 1805. We added figures of miles per hour (mph). Can you guess how fast the wind is blowing today?

2nd Week—Wind: Discussion Topic: Wind is made when the air is warmed by the sun, causing the air to rise. The air shifts when the cooler air, caused by arctic temperatures or the lack of sun, replaces the warm air. Mountains, bodies of water, and deserts also help determine the nature of wind—its speed and direction. For two-thirds of the continental United States, good weather generally comes from the northwest, west, and southwest winds. Bad weather generally is blown from the northeast, east, and southeast. Discuss winds in your area.

3rd Week—Wind Velocity: Discuss the below methods of measuring wind speed according to the Beaufort scale: 0) calm—smoke rises (0 mph); 1) light air—smoke drifts (1-3 mph); 2) light breeze—leaves rustle, wind vanes move (4-7 mph); 3) gentle breeze—leaves and twigs move, light flag extends (8-12 mph); 4) moderate breeze—branches move, dust blows

(13-18 mph); 5) fresh breeze—small trees sway, white caps on water (19-24 mph).

4th Week—Wind Velocity:

Review last week's lesson on measuring wind velocity by the Beaufort scale. Introduce the following numbers: 6) higher wind speeds—strong breeze, large branches move, umbrellas hard to control (25-31 mph); 7) moderate gale—whole trees move, walking against wind is hard (32-38 mph); 8) fresh gale—twigs break, cars hard to steer in crosswind (39-46 mph); 9) strong gale—signs, antennas blow down (47-54 mph); 10) whole gale—trees uproot, bad structural damage (55-63 mph); 11) storm—much general damage (64-72 mph); 12) hurricane—widespread destruction (72-plus mph). (The United States uses 74 mph as hurricane-force winds.)

April

1st Week—Wind Indicator:

You can make a wind indicator with a straw and two triangles cut from thin cardboard. Glue triangles in place. Stick a pin through the middle of the straw into a pencil eraser. Be sure it spins freely. Support the pencil in a yogurt container that is anchored to a board. Mark the container N, E, S, W. Place the wind indicator outside of the church and watch for the wind.

2nd Week—Rain:

Discuss the different words for rain: 1) gentle rain—sprinkling, drizzling or spitting, 2) raining “cats and dogs”—means it's really pouring. What are some ways to describe a hard rain? In recent years, by-products from burning fuels have been rising into the atmosphere and causing acid rain. Has any fallen in your area? What is the answer to preventing acid rain? Discuss how rain recycles from the ground to the sky again and how rain causes plants to grow.

3rd Week—Rain:

Note that some deserts might not receive a single inch of rain in an entire year. Using a globe, identify some desert areas and rain forests of the world. Discuss how plants, such as cacti,

survive in the desert. Compare the desert plant life to that in the tropics. Plants and animals in deserts expect, and receive, little rain. In these arid conditions, some plants can sprout, flower, and bear seeds in just 2 weeks. This way, they take advantage of the rain that might fall just once a year. What would happen if these desert plants had lots of rain?

4th Week—Rain: Explain that some regions in the world have a clear-cut rainy season, lasting many months. During dry months, these areas may be desert-like, but the rains change all that. Countries bordering the Indian Ocean, for example, conform to this pattern when the monsoon winds of summer bring steady rain. (Use a globe to identify this region.)

Optional 4th Week Meeting—

Field Trip: This week take the Rangers on a field trip to a botanical garden (or a greenhouse). The trip should be both fun and informative.

May

1st Week—Animal Behavior.

It is easy to fall into the habit of comparing animals to people. Some animals do possess human-like traits, but this is only coincidental. (Explain that God created man and animals, and discuss how man tries to avoid this reality through evolutionary theory.) Ask the Rangers to list some of the similar behaviors man and beast have in common. Show photographs of various animals that can be found in encyclopedias, and discuss about the animals.

2nd Week—Animal Behavior:

Explain that animal behavior is tremendously varied, from their eating habits to their social behavior. Most animals live in relative peace with one another, with spurts of ritual fighting—which is more bluff than anything. Describe some animal behaviors such as play, flight, or confrontation.

3rd Week—Animal Behavior:

Discuss the various mannerisms of the cat and dog and how they differ.

Ask the Rangers, “When you are mad, does your dog roll over on its back?” Explain that dogs are not far removed from wolves, and in a wolf pack the belly-up posture signals defeat. Wolves fight fair—they won't pick on an animal once it “gives up.” Ask the boys, “Does your dog lick your face?” Explain that the “underdogs” in the wolf pack lick the muzzle of the dominant wolf and that to a dog the human is the dominant one.

4th Week—Animal Behavior:

Explain that domestic cats practice hunting skills; even though they may be fed by their owners, formerly domesticated cats do well in the wild. They are called feral cats. Even kittens like to stalk and pounce on moving things. Watch squirrels in the park and birds at a feeder. You can learn something about the way they keep harmony.

5th Week—Man's Behavior:

This week discuss some of the life-controlling behaviors (or habits) of man. For example, study with the Rangers how habits are formed, using the Royal Rangers *Insight Group* curricula. Place seats in a circle and invite the boys to discuss life-controlling habits—such as drugs, pornography, gambling. Ask for volunteers to discuss a life-controlling habit they may have had or may have or a life-controlling behavior a friend may have. Pray beforehand that the Lord will direct the conversation and use the opportunity to strengthen the boys spiritually. Be prepared with Scripture verses, which can be assigned to the Rangers and read aloud.

Air-Sea-Trail Rangers

Overall Approach: Select topics of your choice that appear in any of the previous meeting feature outlines. Prepare and teach the materials according to the age level of the Rangers.



More

Than

Just a

Simple

Switch

by Paul F. Feller

This issue of High Adventure Leader focuses on "The Sciences." So give your Rangers a better understanding of how electricity actually works.

In 1831 Michael Faraday, a great English chemist and physicist, was experimenting with a coil of wire and a magnet. He

found that moving the magnet through the coil of wire caused an electric current to flow through the wire.

Every time you turn on a light, you benefit from this discovery. Electric motors and generators use the principle that Faraday discovered.

We use electricity every day. It runs our refrigerators, hair dryers, washing machines, computers, and lights. These are only a few of the products that we operate using electricity.

This wonderful thing we call electricity comes from generators. Remember Michael Faraday's discovery? Electric current will also flow if a coil of wire is moved past a magnet. This is what electric generators do.

A generator looks a lot like an electric motor. Coils of wire are mounted on a shaft and magnets are mounted around the coils. As the shaft turns

the coils move past the magnet and come around and move past it again.

Power lines are used to get the electricity from the generator to your house. Power lines are usually copper or aluminum wire. These wires are mounted on utility poles. You can see them along the street in front of your house or sometimes in an alley behind the house.

The electric current leaves the generator at a voltage level that is not the best for sending it long distance over power lines. So transformers are used to raise and lower the voltage as needed.

As scientists worked with the principle discovered by

Faraday, they discovered that when the coils were wound on an iron core, the transformer worked better.

It was discovered that if the first coil had more turns of wire than the second coil, it reduced the voltage. This type of transformer is called a "step-down" transformer. Scientists also discovered that if the second coil had more turns of wire, the voltage was increased. This type is called a "step-up" transformer.

When electric current leaves the generators, a transformer steps up the voltage to several thousand volts—in some cases hundreds of thousands. When electricity reaches your city, the voltage is usually stepped down. Then, before the electricity leaves the pole and comes into your home, the voltage is lowered to 240 and 120 volts.

Most of the appliances in your home operate on 120 volts of electricity. But there are some appliances—such as an electric stove, a clothes dryer, and an electric water heater—that use 240 volts.

The voltage is stepped up or stepped-down with transformers. The transformer that steps down the voltage to 240 and 120 for your house is usually mounted on a pole near your house. It looks like a big can with wires fastened to it. You may want to go

outside and see if you can find the transformer that serves your house.

One thing you always want to remember: Electricity is very dangerous. Do not play with it.


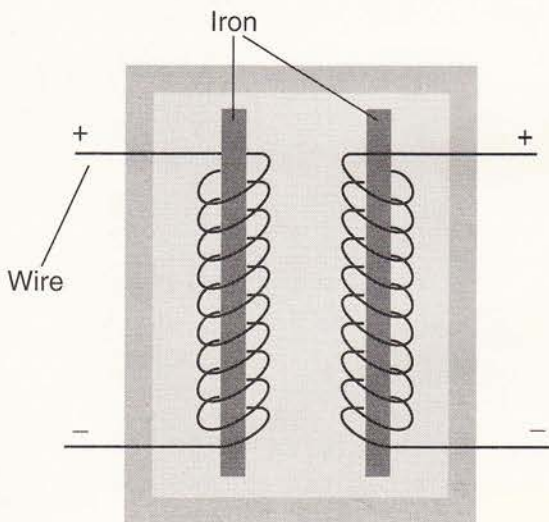
Perhaps next time you turn on a switch to a light or turn on your hair dryer, you will appreciate it a bit more. 

Figure 1

Transformer



Faraday, they found that when an electric current flowed through a wire, it created a magnetic field around it. In future experiments, two coils of wire were placed side by side. When an alternating electrical current flowed through one coil, it caused an electrical current to flow in the other coil. This was called a transformer. The scientists discov-

Power Up!

by LeRoy H. Davis, Jr.

When you flip on the TV, log on to your computer, throw a pizza into the microwave, or turn on the lights in the living room, it's a fair chance some of your electricity comes from a nuclear power plant. Throughout the United States, more than 100 nuclear power plants provide electricity to homes and businesses.

How A Power Plants Works

Think of a tea kettle: When you hear it whistle, you know that heat from the stove has turned some of its water into steam to blow the whistle. If you were to put a toy pinwheel in front of the blast of steam, the energy in the steam would spin its blades.

Now picture a great deal of steam inside a power plant blowing the propeller-like blades of a giant turbine, which spin the shaft of a huge generator. Inside the generator, coils of wire and magnetic fields interact, creating electricity. All steam-electric power plants produce electricity in this way—whether they use coal, natural

gas, oil, or nuclear energy.

In a fossil-fueled plant coal, natural gas, or oil, is burned to heat water in a boiler, turning it into steam to turn the turbine. But in a nuclear plant, nothing is burned. Instead atoms of uranium are split in a process called fission, which creates the heat that turns the water into steam.

Ever wonder what uranium looks like? It comes in the form of ceramic pellets, about the size of the end of your finger. The pellets are inserted into long, vertical tubes that are bundled together and placed inside the plant's reactor—where the fission takes place.

When the plant starts up atomic particles, called neutrons, are let loose to strike the uranium atoms. When the neutrons hit some of the uranium atoms in the pellets, they split to release neutrons of their own, along with heat. These neutrons strike other atoms, splitting them.

One fission triggers others, which trigger more ... until there is a chain reaction. When this happens, the plant is up and running, splitting atoms to create the heat that will turn the water into steam.

Here's how the chain reaction is controlled: Long rods are inserted among the tubes that hold the fuel. These "control rods" are made of a material that absorb neutrons—so the neutrons can no longer hit atoms and make them split.

To slow down the chain reaction,

more control rods are inserted. To speed up the chain reaction, control rods are withdrawn, either partially or fully.

Are Nuclear Power Plants Safe?

Several built-in features help ensure nuclear power plants are safe. For example, the uranium fuel is formed into ceramic pellets, which resist the effects of high temperature and corrosion during the plant's operation. Also, nuclear power plants have multiple back-up systems that protect against equipment failure and several events like floods, earthquakes, and tornadoes. And the radioactive fuel is locked away behind multiple barriers of thick steel and concrete to guard against release of radioactivity.

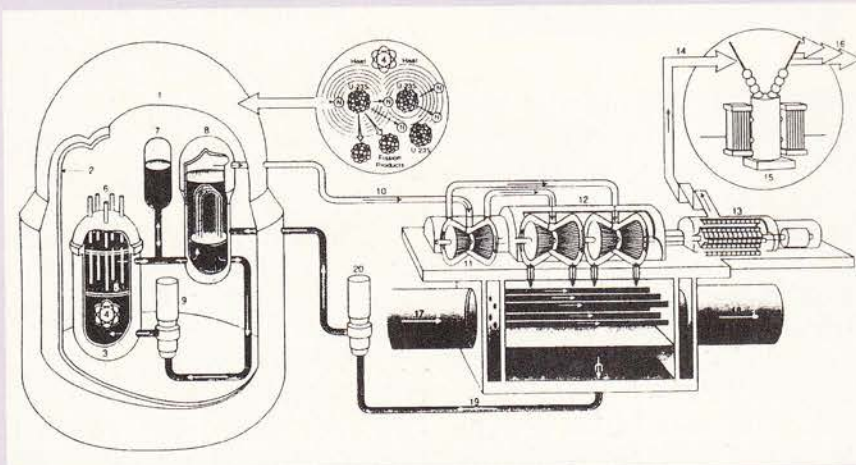
What Happens to Used Fuel

You've probably never heard the term *fission fragments*. They are left-over pieces after the atoms have split, which are radioactive. These fragments collect within the pellets. Remember, this is all happening at the atomic level so the ceramic fuel pellets still look the same. Eventually the fragments reduce the efficiency of the chain reaction—like ashes smothering a fire.

This is the time for the fuel to be changed. Between one-fourth and one-third of the fuel is replaced every 12 to 18 months. The used fuel is cooled and stored under water in large concrete pools lined with stainless steel. Eventually this fuel will be sent to a federal government facility for permanent disposal deep underground.

Nutshells?

Nuclear power has nothing to do with nutshells. But that's the basics on nuclear power in a nutshell. Perhaps you and your outpost can tour a power plant one day. And perhaps you won't take it quite for granted the next time you plug something into an electrical outlet. Without power plants you know where we'd all be: in the dark!



HOW TO MAKE A BOTTLE ROCKET

Reprint courtesy of NASA
(National Aeronautics and
Space Administration)

Description: In this activity, Rangers construct a high-performance bottle rocket from a plastic soft drink bottle and a hand or foot operated air pump to test the effect of varying air pressure.

Materials and Tools:

Plastic soft drink bottle with plastic cap (large or small)
Tubeless tire valve—1 1/4 inches long, TR No. 413 (available from auto supply stores)
Drill
Drill bits—5/32 inch and 9/16 inch (or spade bit)
Small vise
Air pump, foot or hand style (not bicycle frame pump) with pressure gauge and lever-type valve attachment
Small knife blade or valve stem tool
Safety goggles

Procedure: (steps 1-5 should be done by the teacher)

- Using a small knife blade or a valve stem tool, remove the needle valve from within the tire valve. To do so, place the blade point inside the valve (cap end) and gently turn the valve. The needle valve will begin to unscrew. Remove it and discard.
- Enlarge the hole inside the tire valve with the drill 5/32-inch bit. Hold the valve with a vise while drilling. Press the drill gently to avoid jamming the bit.
- Using the 9/16-inch bit, drill a hole through the venter of the plastic cap of the soft drink bottle. Carefully clean off any plastic burrs with the knife.
- Press the tire valve from the inside through the hole in the

plastic cap until it locks into place.

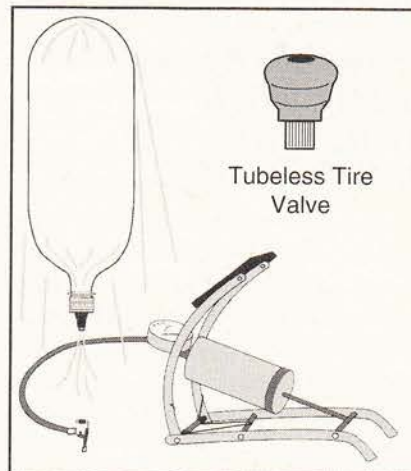
- Screw the plastic cap on the soft drink bottle. The bottle is ready for launch.
- Attach the pump valve to the rocket. Push the lever to lock the valve on the rocket. While wearing safety goggles, pump the rocket to a pressure of 30 pounds. Hold the rocket upward by the pump hose and valve. Aim the rocket in a clear direction and quickly open the lever on the pump valve. The rocket will take off. Pump the rocket up again but this time to a pressure of 60 pounds. *Caution: For a safety margin, pump the rocket no higher than 90 pounds. This is approximately 50 percent of the industry specifications for this kind of container.*


Discussion:

Like a balloon full of air, the bottle rocket is pressurized. When the pump valve is opened, air escapes the bottle, providing an action force that is accompanied by an equal and opposite reaction force. Increasing the pressure inside the bottle rocket produces greater thrust. This is because a greater mass of air inside the bottle escapes with a higher acceleration (Newton's Second Law of Motion). Try adding a small amount of water to the bottle. The escaping mass increases, and thereby increases the action force produced.

Teaching Notes and Questions

- Have each Ranger bring plastic soft drink bottles to decorate and fly. The tire valve/cap

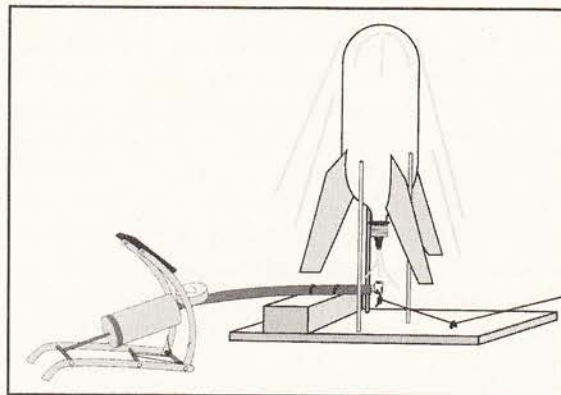


can be shared among the different bottles. Is there any difference between the flight of large and small bottles? Is there any difference in the amount of effort required to raise bottles of different sizes to equal pressures? Compare the volume of the bottles with the number of pump strokes required. 

Hawthorne, M. & Saunders, G. (1993), "Its Launchtime!," *Science and Children*, v. 30, n. 5, pp. 17-19, 39.

Rogis, J. (1991), "Soaring with Aviation Activities," *Science Scope*, v. 15, n. 2, pp. 14-17.

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Scripture verses cited from
the New International Version

How To Make a Hit With Your Parents

By Martha R. Fehl

So who cares if parents like you or not? *You* do! Life is a lot easier when you follow the rules and try to get along with your parents. You know what to expect and so do they. Here are 10 rules that will help you get along with your parents.

1. Every time you leave the house, tell your parents where you are going and when you will be home. Emergencies do happen. They need to know where to find you.

2. If you are going to be late, call them. It will make the situation better when you do get home.

3. Thank your parents for what they do. Spend time with your family. Have fun with your parents. It makes parents feel that you care about what they do for you.

4. Give your mom a hug or kiss once in a while to surprise her and show you care. Say, "I love you." Parents like to hear the words as much as you do.

5. Offer to help out if someone is not feeling well. This shows that you are responsible. Parents will give you more freedom if they know you can be trusted.

6. When you have asked for money as a loan, remember to repay. Good credit begins at home. When you repay them, they are more likely to loan you money again.

7. When using the kitchen, be sure to clean up your mess. This goes for every room in the house. You live there, and you should take responsibility for what you do.

8. Be honest. A small lie now will only be worse later. You rarely can tell just one lie. Lies build, and then you really get yourself in trouble.

9. If you get in trouble, tell your parents immediately—before someone else does. If they hear about what you have done from someone else, they will be much tougher. They like to hear about your mistakes from you.

10. Remember that you are important to your parents. They love you very much. They want to help you—not hurt you. You can trust them, and they want to trust you.

Leader: Read Romans 1:18-32 (emphasizing "they disobey their parents") and apply it to why boys should honor their parents and the Lord. Also, read Ephesians 6:1; Colossians 3:20.

God, Sometimes I Wonder About You

by Michael Warren

I never doubted God much ... until my parents got divorced. Before then I had no reason to question what I was told about Him. In elementary school, before lunch, we'd pray: "God is great, God is good. Let us thank Him for our food." End of story.

But when God let my parents slip up—at least I thought it was God's fault—I started to wonder. I prayed and prayed for God to make things better again. Things didn't get better. I often cried and got angry. Sometimes I wondered if God was even listening, if He even cared.

I'd test Him at times. I'd say, "If You really love me, if You're really listening, do this...." But I found out quickly God doesn't work that way.

In the Shadow of a Doubt:

It's the kind of thing you

don't talk about much. I certainly didn't. A year later I went to a Christian school, where everybody believed in God.

We answered questions about God on tests in Bible class. But when it came to the *real* test of life, I wasn't always so sure about the answers.

If a doubt would come up, I'd push it away. *You're not supposed to doubt God*, I thought. *That's a lack of faith. You don't question a Creator of the universe!*"

These questions come up during life's difficult times: death, divorce, breakups, failures, sickness, tragedy. Maybe it's easier to believe in God when everything is going well. Or maybe it's not. Sometimes our relationship with God is developed during the hard times.

You might think that if Jesus were on the earth today, it would be a lot easier to believe in Him. You could just go up to Him and talk. Well, the truth is, you still can! But even the miracles Jesus performed while on earth didn't get rid of doubt. People doubted Jesus just as much then as they do now.

Did you know that even the saints in the Bible doubted God at times? You probably know about Doubting Thomas, one of Jesus' disciples. When his friends told him Jesus was resurrected, Thomas replied, "Unless I see the nail marks in his hands and put my finger where the nails were, and put my hand into his side, I will not believe it" (John 20:25). He was a skeptic.

But here's the thing: Jesus didn't call fire down from heaven on Thomas. It doesn't even seem like Jesus raised His voice. He said, "Because you have seen me, you have believed; blessed are those who have not seen and yet have believed" (John 20:29).

You may doubt if Jesus is lis-

tening to your cries. But remember this: Jesus is always by your side if you believe in Him.

Help My Unbelief (Part 2)

Does this sound like you? Sometimes you want to believe in God. You want to be sure that He's listening to your prayers, that He cares, that His promises are true. But in the back of your mind, it's hard. You can't get rid of that nagging voice that says: "You don't have proof of God. You can't see Him."

You're not alone. Once there was a man whose son desperately needed to be healed. Jesus told him, "Everything is possible for him who believes" (Mark 9:23).

Now, this father *wanted* to believe. He wanted his son healed. He had heard about other people being healed, but he hadn't seen it for himself. It might have been a coincidence. And if it was true, who's to say it would work for him?

Doubt. It nagged at him, just like it can nag at you. So he told Jesus, "I do believe; help me overcome my unbelief!" (Mark 9:24).

What a line! It perfectly sums up how we all feel sometimes. But, unlike this man, we don't always admit to God how we feel. In this case, the boy was healed.

You see, it's God who gives us faith. He recognizes that He's bigger than we and that we need help to understand Him. We have to ask for the help, though.

There are many more stories in the Bible like that. The prophet Habakkuk said, "How long, O Lord, must I call for help, but you do not listen?" (Habakkuk 1:2). And read Psalm 22. It begins: "My God, my God, why have you forsaken me? Why are you so far from saving

me, so far from the words of my groaning? O my God, I cry out by day, but you do not answer."

The author of that poem was David, who was as close to God as any human has ever been. God called him a personal friend. Then how could David say such things?

But wait, there's more. Jesus Christ himself said as He was dying on the cross, "My God, my God, why have you forsaken me?" (Matthew 27:46). Jesus knows what it feels like.

Leader: Involve the Rangers in a discussion on discouragement and how it relates to them. Reemphasize the Scripture verses cited above.

Why Doesn't God Answer? (Part 3)

Will God always answer every prayer immediately and the way you want? Of course not. Even Jesus prayed that He wouldn't have to suffer the Crucifixion. He prayed three times for God to work it out another way. But the answer He got was, "No."

"No one is exempt from tragedy or disappointment—God himself was not exempt," writes Philip Yancey in his book *Disappointment With God*. "Jesus offered no immunity, no way out of the unfairness, but rather a way through it to the other side."

God can and does intervene for us. But in His time, not always when we want. That's tough medicine sometimes. You know all those people He healed back in Bible times? They all eventually died of something, and God didn't prevent it. And people who are healed today also die eventually. Expecting God to "work magic" leads to disappointment.

God gave us a free will. He wants us to *choose* to love and believe in Him. If He was just our "grant giver," we wouldn't be developing a *relationship* with Him. As one man said, "When there is no longer any opportunity for doubt, there is no longer any opportunity for faith either."

Waiting on God:

Here's how it turned out for me, anyway. I don't want you to think God never answered my prayers. There were a couple of times back during those dark days and nights—I remember them like they were yesterday—when God answered my prayers almost before I said, "Amen." Real miracles. And help when I needed it.

Looking back I can see that God helped me through my trials. But He didn't "magically" fix things for me. When I prayed, "God, please make my parents get back together," it didn't happen. God still loved me, though, and helped me through tough times.

Sometimes it's difficult to see God's involvement until afterward. Looking back, you'll see that God helped you. But when you're right up close to the problems in your life, you can't see things clearly. A few days, weeks—sometimes even years—later, you'll see God's hand.

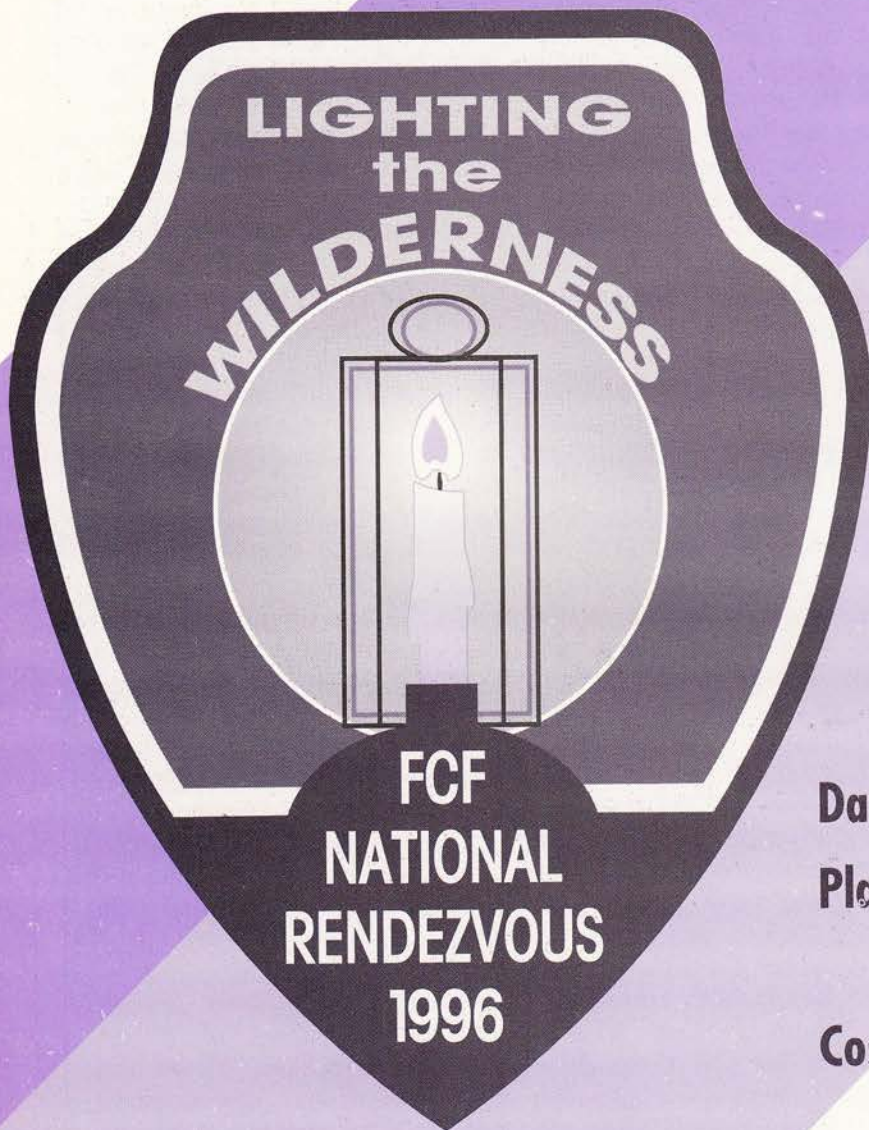
He'll never leave you. You may not be able to see God, but He sees you. And He believes in you.

Leader: Involve the Rangers in a discussion, based on Scripture, of how God answers prayer in His timing. Allow the boys to share the tough times they may be experiencing, and help them understand that God is always with them. Also, invite boys to share how God answered their prayers.



1996 National Rendezvous

For members of the Frontiersmen Camping Fellowships



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(John 8:12)

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1 1/2 school buses. The word *payload* refers to the items the shuttle is carrying. Examples of payloads are satellites and a telescope that sees 10 times as far as earth-based telescopes. The payload specialist is usually selected by the organization that built the payload.

The cargo bay is big enough for four small satellites or two large ones. Also, in the shuttle's cargo bay is the Spacelab, a completely furnished billion-dollar laboratory where experiments are conducted in a shirt-sleeve environment. When working in the cargo bay, though, they must wear protective space suits.

The payload specialist also operates the television system and manipulator arm (equipment in the cargo bay that can lift heavy satellites and more). He is also

trained in house-keeping chores and emergency flight procedures. The pilot maneuvers the orbiter for docking or payload handling.

Computers Rule

Without computers there can be no shuttle. They control the basic running of the spacecraft, continually check

the flight path, process the crew's medical data, and monitor the shuttle's air content.

Computers are used to carry out a prelaunch check. They send data to the engines during both launch and orbit. They record information on the shuttle's performance. In short, the computer system is in complete control of every phase of the flight. When it comes to making decisions, the computers even compare results and vote, and the losing computer is ignored.

Before launch the computers are

loaded with two mass-memory tapes containing 34 million

types of information. They are then sealed to prevent any accidental erasures.

Five computers are on board—four and a backup—processing information at the same time, checking each other's data a few hundred times every second. The crew interacts with the system, able to enter

commands or ask more than 1,000 questions.

The Future

Plans are now underway for an international space station, with the U.S. teaming with many other

including those who are not career astronauts.

In the space station, technology of the future will be tested in a nearly gravity-free environment. Researchers will be able to conduct

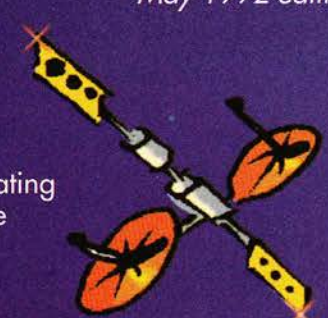
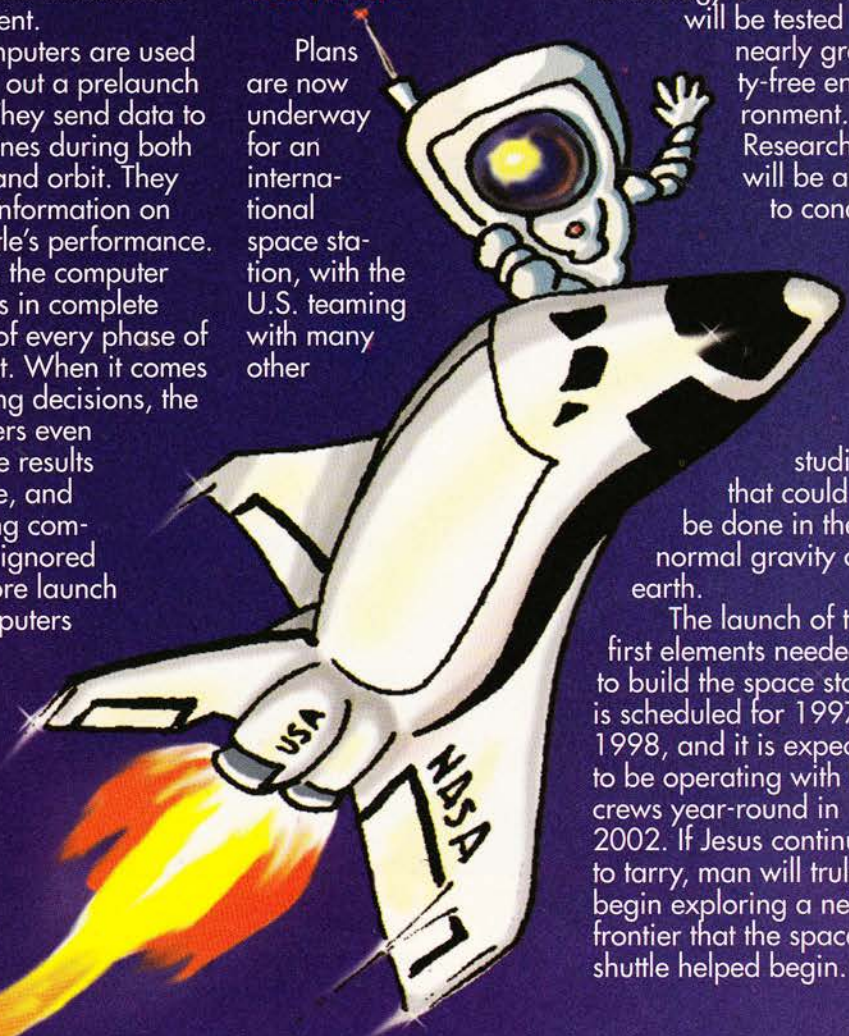
studies that could not be done in the normal gravity of earth.

The launch of the first elements needed to build the space station is scheduled for 1997-1998, and it is expected to be operating with full crews year-round in 2002. If Jesus continues to tarry, man will truly begin exploring a new frontier that the space shuttle helped begin. 🌐

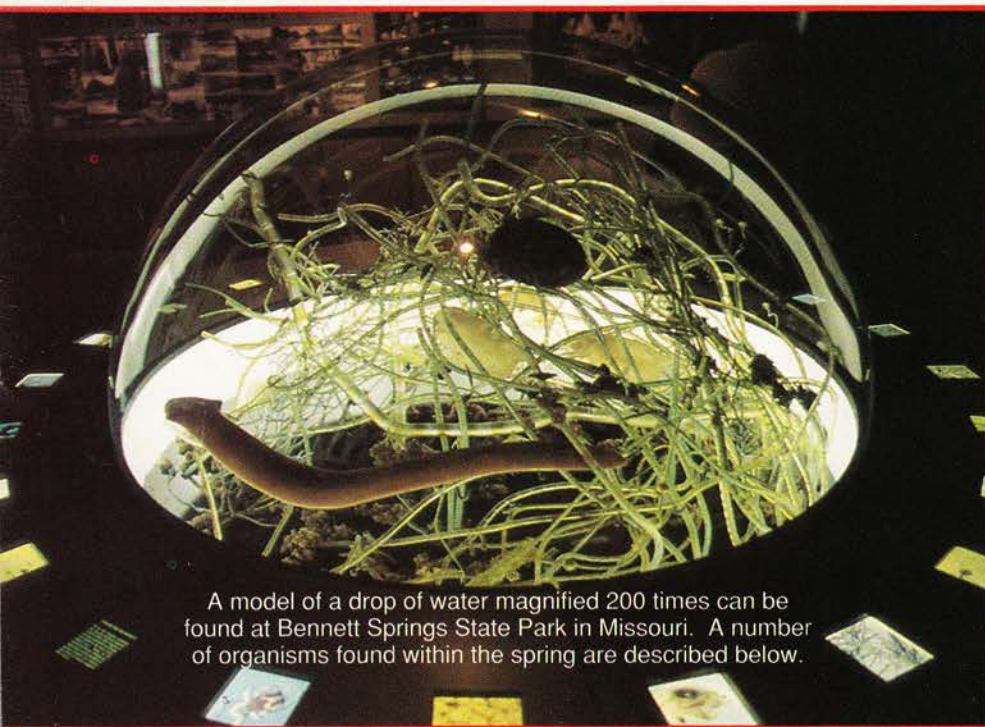
countries in the largest cooperative scientific program in history. Together they will build and launch the station, a permanent science institute in space where long-term research will be conducted.

While experiments on the space shuttle are limited to a single mission, experiments on the space station can continue as long as necessary. Operating the station will be rotating crews,

Information provided by the National Aeronautics and Space Administration, Countdown! NASA Launch Vehicles and Facilities, October 1991 edition, and Space Shuttle Mission Summary, The First Decade: 1981-1990, May 1992 edition.



Microspace: The Tiny World in a Drop of Water



A model of a drop of water magnified 200 times can be found at Bennett Springs State Park in Missouri. A number of organisms found within the spring are described below.

by Michael S. Smith,
area commander, Southern
Missouri District

Have you ever seen those wonderful pictures of our planet earth from outer space? The world we live on is but a small part of a great universe. A single drop of water hanging from the end of an eye dropper is just as vast a world for many tiny organisms. Through the wonder of magnification, we can look into this microspace and explore this complex community.

Limnologists, scientists who are best described as inland oceanographers, have collected and identified many of these small plants

and animals. They study these organisms to identify their structure, life history, and relationship to other organisms. Life in this watery microspace is no different than life anywhere else on earth. Miniature plants harness the sun's energy, using the process of photosynthesis* to produce both food and oxygen.

God enabled all life to reproduce itself. Tiny animals require food, oxygen, shelter, and space just like their land-loving cousins. Let's meet a few of the organisms found in just a single drop of water:

Algae act as trees in our miniature world. They can

convert the sun's energy into sugars, which enables them to grow and reproduce. Algae give water its green color. These plants can be found in many forms including single cells, chains, spirals, and strands. Algae keep the water oxygenated and can be utilized as food by animals. They are part of the base of the aquatic food web.

Diatoms are the grass pastures within our miniature world. There are many species and numerous individuals found in a single drop of water. Diatoms carry on most of the world's photosynthesis. These organisms use a mineral called silica to build their glassy shells. When diatoms die they fall to the bottom and their shells become part of the sediments.

Protozoans are single-celled animals. They come in many kinds and shapes. They eat bacteria, algae, other protozoans, and almost anything else they can swallow. Some protozoans contain chlorophyll, which enables them to produce their own food. Protozoans have several means of locomotion.

Amoebas are able to extend their bodies to move. Other protozoans have cilia, hair-like projections that

Continued on page 14

MAJOR BUMMER



by Robb Hawks, national
productions coordinator

"You can't do that!"
Sheldon said.

"And why not?"
Jonathan snapped back.

"Because it's cheating,"
Sheldon yelled back
in Jonathan's ear.

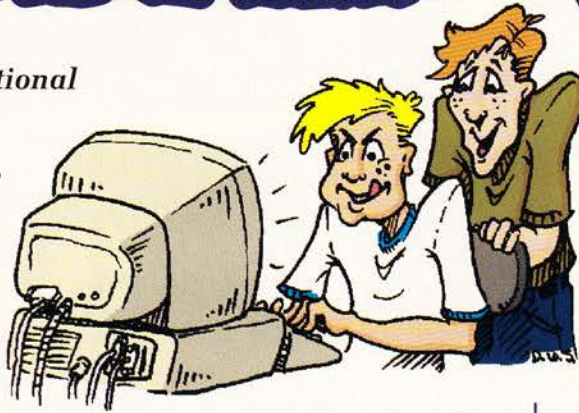
"No it's not," Jonathan
replied innocently. "The
sectional commander said
that we were allowed to
use our computers to help
solve his riddle. And that's
what I'm doing!"

"But ... but ...," Sheldon
began.

"No buts about it—I'm
going to win!" Jonathan
asserted with confidence.
Jonathan's fingers sped
across the keyboard. Finally
he hit the enter key. The
computer sat silently for a
moment then a telephone
dial tone was heard, followed
by a number of tones as the
computer's modem dialed a
phone number and connected
to the World Wide Web of
the Internet. (The Internet is
a way in which millions of
computers around the world
can access each other through
the telephone lines.)

"I don't think this is quite
what the commander had in
mind when he issued the
riddle," Sheldon whispered.

"Just be quiet and watch!"
Jonathan interrupted as he
typed more requests into the



computer. Jonathan
was trying to weave his way
through a complex process
to find a certain bit of
information. Jonathan was
searching for the "address"
of one such computer.

The sectional commander
had given the challenge to
all the outposts in the
section. He knew that the
local commanders would
try to solve his riddle also,
so he had made it very
complex. It was one of those
word problems like you get
in school. It involved how
much power a generator would
have to make in order to run
certain machines for a
certain duration doing a
variety of functions. A
number of other variables
seemed to make the challenge
impossible.

That was until Jonathan
got his "brilliant" idea.

"There ... I found it!"
Jonathan squealed. "Now
just a few more commands
and we will have access to
a computer that can solve
this riddle in no time flat!"

"Jonathan? Are you allowed

to access the computers at
the North American

Electric Company?"
Sheldon asked.

"I don't know. I think
anyone with a computer
can access the power
company's computer for
information on their electric
bills and such."

Jonathan continued to
furiously hit keys to access
the electric company's
computer. "Besides, we're
having fun solving the
commander's riddle."

The few moments of the
sound of tapping on the
computer keys was quickly
interrupted: "We're in!"
Jonathan exclaimed. He
quickly found the program
he was looking for and
entered the parameters to
solve the riddle. Then
Jonathan leaned back in
his chair to wait for the
answer.

Suddenly the bedroom
lights flickered and went
out. Jonathan looked down
at his computer. It too had
gone out.

"Major bummer," Jonathan
exclaimed. "What a time
for a power failure. I guess
we'll have to wait until
the power comes back on
before we can get the
answer to the question."

The power was off all
afternoon. Finally, just
before dinner, the
electricity came on.
Sheldon and Jonathan

Continued on page 14

RASCAL RANGERS

ROYAL RANGERS
GO-CART RACE

SIGN UP TODAY!
\$\$\$ PRIZES \$\$\$
AND TROPHIES

BY: DAVID W. SMITH

O.K. GUYS, THIS IS THE BIGGEST RACE EVER!! AND WE'RE GOING TO WIN!!

YEA!
YEA!
YEA!

IT SHOULD BE SHAPED LIKE AN ICE CREAM CONE TO CUT THROUGH THE AIR!

MORE POWER
MORE POWER
MORE POWER
MORE POWER

IT NEEDS WEIGHT IN THE BACK TO PUSH IT DOWNHILL. I ALSO HAVE OLD BIKE PARTS.

I'LL ADD SOME FIRE CRACKERS AND BOTTLE ROCKETS

HERE'S AN OLD MOWER ENGINE. IF I MAKE SOME MINOR CHANGES...

AND ADD A NITRO BOOSTER SWITCH FOR FASTER STARTS.

WE'LL BE THE BEST! THIS CAR WILL BE UNSTOPPABLE!

ANYONE WHO GETS IN OUR WAY WILL BE CRUSHED!

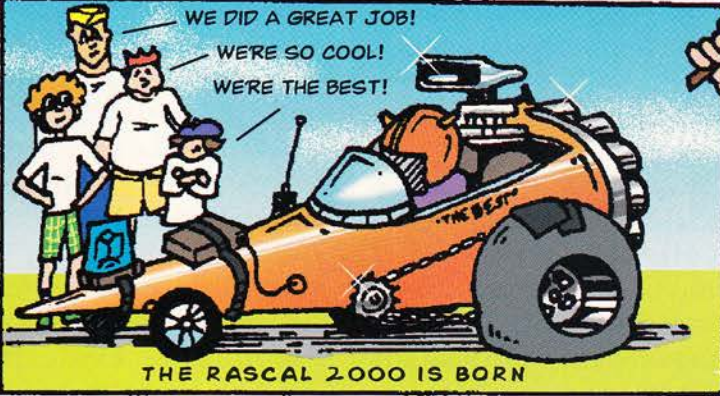
SMACK!

WE'RE GOING TO EAT THE COMPETITION

THEY'LL BE CRYING BY LUNCHTIME.

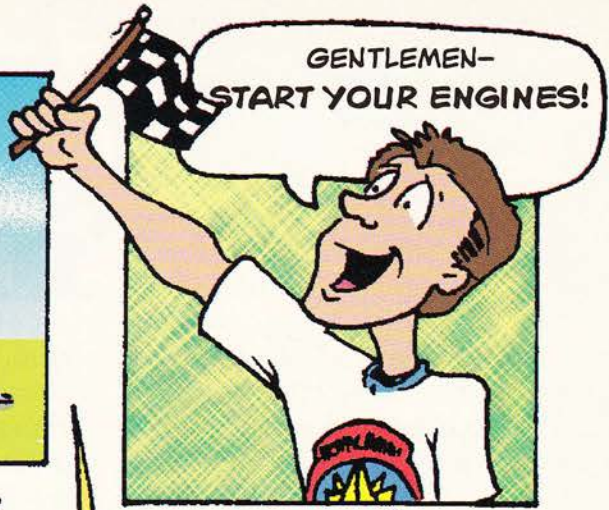
AND WE'LL DO IT ALL ON OUR OWN

The Big Day finally arrived

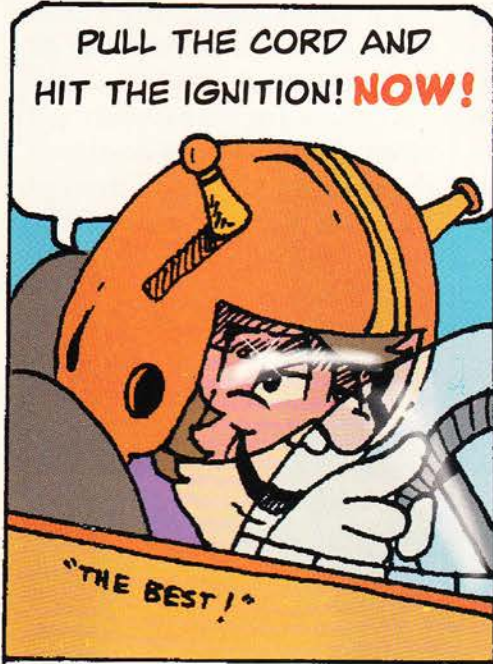


WE DID A GREAT JOB!
WE'RE SO COOL!
WE'RE THE BEST!

THE RASCAL 2000 IS BORN

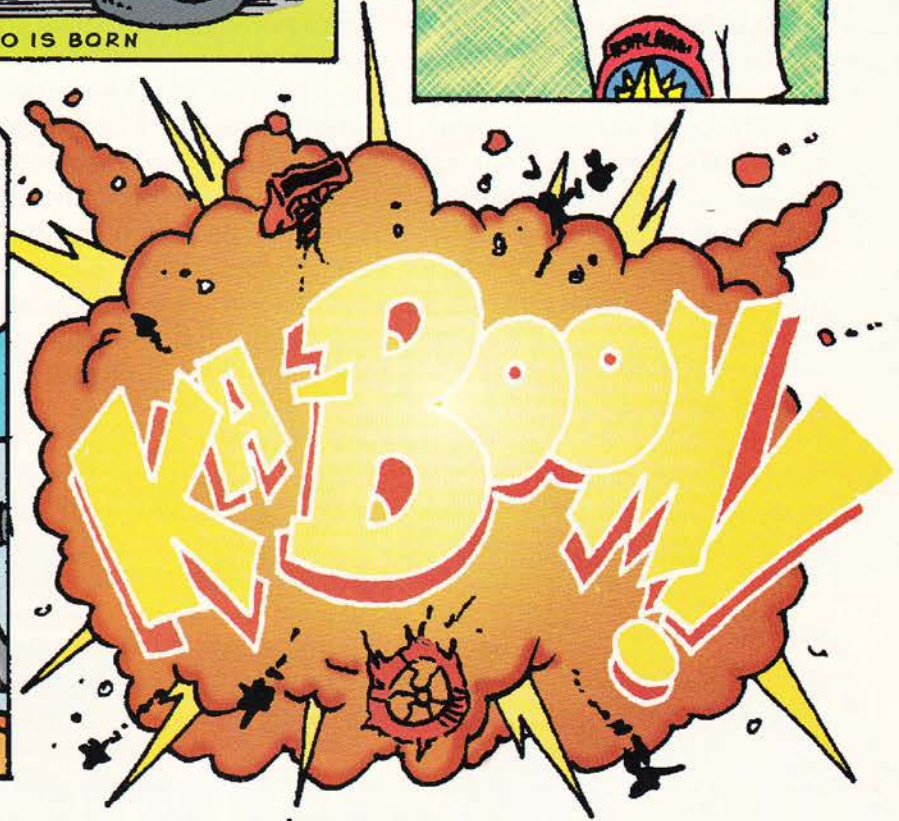


GENTLEMEN—
START YOUR ENGINES!



PULL THE CORD AND
HIT THE IGNITION! **NOW!**

"THE BEST!"



D.W.S. '95

"Before his
downfall a
man's heart is proud,
but humility comes
before honor"
(Proverbs 18:12, NIV)

swing like oars or a single filament tail that whirls like a propeller.

Rotifers are animals that look something like open swimming bags. Rotifers represent a varied group of animals who have ciliated mouths. These cilia serve for locomotion and spin to move food into the rotifer's mouth.

Rotifers come in a number of different shapes. Some plant-eating rotifers must eat four to five times their weight daily to survive. Certain kinds of rotifers have bizarre food needs. Some eat only dead organisms, others just worms, still others a specific kind of bacteria.

Be glad you are not a rotifer! The males live no more than 3 days. Female rotifers live much longer.

Copepods belong to the group of animals known as crustaceans. Crustaceans include animals such as lob-

sters, crayfish, and shrimp. Copepods are much smaller. The cyclops is a distinctive one-eyed copepod. Its antennae spin and create a current which brings food into its mouth. Copepods feed on single-celled organisms and algae. A few copepods are fish parasites.


Water also contains a number of other larger organisms. These would include water mites, flatworms, and seed shrimp. It's important to note that bacteria are an important part of our microspace. Bacteria act as janitors by consuming the wastes and carcasses of the organisms found in our drop of water.

God's Divine Plan

The Bible tells us that *God created all things*. There is no doubt that a great plan was in place to create the microspace of our drop of water. I was once asked how I would explain the repetition of certain parts in both the simplest

and most complicated forms of life. For example, the professor noted that cilia are found in both the simplest organisms—like protozoans—as well as within our lungs. The list went on and on.

You can probably guess what he expected me to answer. However, instead of responding, "Evolution," I told him that this repetition was evidence of a divine plan. God's designs are perfect. A good idea was used over and over.

Take a look at God's creation. Whether we consider the microspace of our drop of water or the vastness of the stars, we should be able to quickly recognize God's handiwork. 

** Photosynthesis, according to Webster's Dictionary, is "synthesis [production or combining] of chemical compounds with the aid of radiant energy and especially light."*

Continued from page 11


had spent the entire afternoon just sitting around and waiting. With the electricity back on, the TV in the living room also came on.

Jonathan's dad had just returned from work and flopped down in his favorite chair. He was grumpy because all the traffic lights weren't working. It took him hours to get home.

The evening newsman reported that a number of accidents had snarled traffic for hours. Jonathan and Sheldon were just getting the

computer rebooted when they heard Jonathan's dad call to his mother.

"You'll never believe what caused the power outage, Dear," his dad began. "It seems that a computer hacker got into the power company's computer that controlled the generators and totally trashed the control settings. It took them all afternoon to reprogram the computers. The news says that the power company lost over \$1 million worth of income this afternoon. Wow!"

Sheldon looked at Jonathan, who just stared down at his computer. "One million dollars," Jonathan said as a sick feeling hit his stomach. 



Comedy CORNER

Few people knew it, but Samson was one of the greatest actors of all time. He never had to say a word. All he had to do was throw out his chest, reach out his hands, and push against a couple of pillars, and he brought down the house.



A Royal Ranger had worked hard on his Gold Medal of Achievement

acceptance speech. Then came his time to make it. He was very nervous and couldn't seem to get the words out like he had planned.

"Friends," he told the listeners, "when I came here this evening, only God and I knew what I had planned to say to you. But now only God knows."



When the minister stopped by a house to visit

one of his members, he found the father cleaning the yard. It was full of toys and bicycles used by his small children.

"Pastor," he said, "I now clearly understand the meaning of the sermon you recently preached, 'When you become a man, you put away childish things!'"

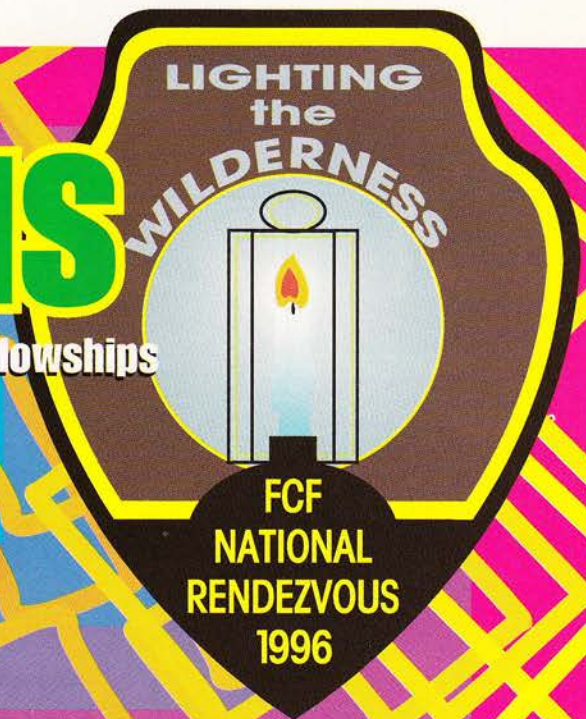
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Prewitt, New Mexico**

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For members of the Frontiersmen Camping Fellowships

"Lighting the Wilderness" (John 8:12)

Date: July 15-19, 1996
Place: Camp Eagle Rock
 Eagle Rock, Missouri
Cost: Young Bucks: \$40
 Old-Timers: \$50



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GET OUTTA HERE!

Gather up your Royal Rangers and head out of town this spring. Enjoy outdoor excursions for a few hours or a few days. You supply the Rangers and GPH will supply the gear!



A. Two-Man Trail Tent Guaranteed for a lifetime by the manufacturer! Watertight A-frame tent has a rear window, Velcro™ flap closures, and T-type door zipper. Aluminum poles, mesh-covered windows and doors, and durable nylon floor. 3-season recommendation. 5 x 7' **08FL1118 \$32.50**

B. Backpack Stash your trail gear or schoolwork in the large zippered compartment or smaller pocket. Padded adjustable shoulder straps ensure comfort when you're hiking hillsides or hallways. Top loop slips easily over a cabin nail, coat rack, or school locker hook. 5 x 12 x 15" **17FL0358 \$19.95**

C. Detachable Eating Camp Set Provides two knife blades, a fork, spoon, can opener, bottle opener, and corkscrew. **08FL1114 \$4.95**

D. Survivo II Survival Kit All-in-one kit includes waterproof matchbox, S.O.S. whistle, fire starter striking flint, S.O.S. signaling mirror, and liquid filled compass. Nylon lanyard. 1 x 4 5/8" **08FL0319 \$3.95**

E. Signaling Mirror Laminated 1/4" plate glass like those used by the United States Air Force. Screened center sighting hole helps you focus light directly on target. Metal reinforced corner hole for lanyard. Instructions on back. 2 x 3" **08FL1036 \$6.95**

F. Silva Starter™ Compass Millimeter scale, 5 degree graduations, red/black North and South lines, and an orienting arrow for a red-to-red needle match. 1 7/8 x 3 3/16" **08FL1052 \$10.50**

G. Waterproof Brass Match Box Striking two sticks together isn't your only choice! Heavy gauge nickel plated brass box has watertight rubber seal and instant striking surface on the side. 2 1/2" **08FL1048 \$2.00**

H. One-Quart Canteen with Strap Green polyethylene plastic with attached plastic screw-on cap. Comes with cover. **08FL1035 \$6.95**

I. Tri-Fold Shovel Cuts through dirt and ice with 5 1/2 x 8" blade. Folds from 23" open to 6 1/2" closed. **08FL0597 \$8.75**

Folding Triangle Saw Slice logs with a Swedish-style saw. 20" blade stores safely in metal sheath until next use. **08FL0599 \$8.50**

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