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alcohol-related conditions at the time of both initial and followup interviews.

It is anticipated that future morbidity surveys of the United States directly related to collection of alcohol-related data will be able to use this instrument to diagnose clinically defined alcohol abuse and dependence. The demonstration of relative equivalence of method and results based on the ECA program's development of a viable standardized methodology for the epidemiologic study of psychiatric disorder has also set the stage for comparative studies of all sorts. To date, the DIS has been translated into 20 languages, and ongoing research using the DIS and ECA program methodology is being conducted on numerous special populations in the United States (e.g., diabetics, disaster victims, alcoholic patients) in addition to general population surveys in over nine countries including the Republic of China, Peru, Japan, Germany, and Canada. ☐

Turn to page 77 for references.

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A Natural History of the Fetal Alcohol Syndrome: A 10-Year Followup of Initial 11 Patients

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adopted. In this small sample, the differential effects of these diverse environments is not obvious in terms of intellectual development, but the caretaking environment does appear important in terms of social and emotional adjustment during adolescence.

The single most differentiating characteristic in the backgrounds of the four most handicapped children (Patients 4, 7, 9 and 11) is that three of their mothers were so severely alcoholic that they had died of alcohol-related causes within 6 years of the birth of these children (Table [illegible]).

Child neglect has been documented at least once during the early years in five of the nine children followed. Two appear to have been the victims of physical abuse (one in a natural home and one in a foster home), and one has been abused sexually (Table 2). For those who remained with their natural mothers, the first years were always tumultuous, with a supportive relative or friend being particularly important as a refuge for the infant when the mother was drinking. Although the risks of child rearing in an alcoholic milieu are well known, these children were often particularly difficult to care for during their early years because of their failure to thrive, feeding difficulties, hyperactivity, and intrusiveness. On the other hand, of the three relinquished at birth by their mothers to state custody, one died in an apparent drowning accident in an adoptive home and another spent the first 1.5 years in a hospital and then had four different foster homes in seven years before finally getting into a stable home environment at 8 years of age.

Conclusions

Followup of these children over a 10-year period has suggested two factors that may well be helpful in predicting the ultimate prognosis for individuals with the fetal alcohol syndrome.

Of greatest predictive significance is the extent and severity of the pattern of malformation. In a previous study that included some of these children (Streissguth et al. 1978), severity of the pattern of malformation and growth deficiency was correlated with degree of intellectual impairment. In this study, the four children with the most striking craniofacial abnormalities (Patients 4, 7, 9 and 11) have the most severe degree of microcephaly (abnormal smallness of the head), the shortest stature, and the most impaired intellectual function. Three of these four infants presented in a breech position at birth, while none of the four moderately affected children did so.

The most predictive factor in the backgrounds of the four most severely handicapped children was the severity of maternal alcoholism. Three of these four mothers had died of alcohol-related causes within 6 years after the birth of the child, suggesting that biological factors associated with the terminal stages of alcoholism may be involved for the most severely handicapped children. Unfortunately, the quality of the later home environment could not overcome the severity of the prenatal insult. Two of the four most severely affected children lived in the most stable foster homes suggesting that the prognosis for children with the most severe fetal alcohol syndrome depends primarily on the extent and severity of the prenatal exposure to alcohol. However, improved social and emotional development was noted in all patients when home environments stabilized. This resulted from decreased maternal drinking, departure of the alcoholic mother, or placement of the child in a stable foster or adoptive home. ☐

This research was originally published in Lancet on July 13, 1985. Turn to page 73 for references.

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Training Professionals to Identify and Treat Pregnant Women Who Drink Heavily

Continued from page 35

aged to discuss their responses to the counselor and her techniques. By comparing this patient with others, viewers are allowed to express frustration, anger, and concern towards patients. The goal is to recognize that the interviewer's unemotional, nonjudgmental, and supportive statements allow her to maintain communication with the patient.

Conclusion

Pregnancy is a time in a woman's life when changes in physiology and social role cause her to think and behave differently. The sense of responsibility for another life increases the mother's receptivity to assistance in overcoming problem drinking. Women are concerned about multiple health issues and will adopt a lifestyle consistent with total health. Professionals must develop new attitudes towards alcohol abuse by pregnant women. Treatment programs with pregnant women report that 60 to 80 percent of heavy drinkers reduce consumption before the third trimester.

The adverse effects of heavy drinking on fetal development have been demonstrated repeatedly in clinical, epidemiological, and experimental programs (Rosett and Weiner 1984). High blood alcohol concentrations represent a risk at all stages of pregnancy. There is no safe time for intoxication. Reduction of heavy drinking

[illegible] of drinking [illegible] pregnancy [illegible] Some benefit can also [illegible] whenever alcohol abuse ceases. Incorporation of treatment strategies into routine prenatal care represents an effective, low-cost method of preventing fetal alcohol syndrome and fetal alcohol effects. The Fetal Alcohol Education Program helps to improve the skills of health care professionals who can facilitate effectively the reduction in drinking among pregnant women.

Turn to page 74 for references.

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An Evaluation of the Pregnancy Health Program

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[illegible] who is unresponsive to treatment, is at risk herself, and is carrying an infant who is at very high risk. This type of patient, seen in all types of alcohol treatment programs, often receives extensive services without a corresponding change in her condition. The women in group 3 are typical of this prototype. All but one had at least four PHP appointments prior to delivery, and total service hours ranged from [illegible] with little improvement. The vulnerability of the mother as well as the fetus is becoming evident. For example, a high death rate after delivery has been reported among mothers who have had FAS children (Beattie et al. 1983). The case histories of women in group 3 are consistent with a poor, possibly fatal, prognosis.

Only 10 percent of the cases in this study fit this bleak prototype. By the end of PHP contact, most mothers (86 percent) were judged by independent raters to have improved. This result underscores the importance of identifying women who drink too much and providing effective education and treatment for them before their problem becomes chronic.

Pregnancy is a time when most women seem to decrease their drinking easily (Hook 1976; Larsson 1983; Little et al. 1976) and generally respond well to treatment (Larsson 1983; Rosett et al. 1980) at least in the short run. The data from this study support these findings.

Conclusion

We suggest that pregnancy is an ideal time to intervene in heavy drinking. We have outlined a simple method of screening that will identify those patients at the first prenatal visit. We have also presented evidence that if a heavy drinker receives education, and treatment if needed, she is likely to experience a significant decrease in alcohol consumption beyond that normally expected. Finally, we have reported that women who are identified and treated early have healthier babies.

Prevention of fetal alcohol effects requires intervention in maternal alcohol use at all levels of drinking, from regular use to the most severe alcoholic drinking. But prevention efforts must start earlier and continue longer if they are to be maximally effective. True primary prevention requires women to decrease their drinking before conception. And resolution of any alcohol problem should endure after delivery so that decrease in drinking that occurs during pregnancy is the beginning of a long-term recovery that will benefit both mother and child.

Turn to page 75 for references.

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State Strategies for Prevention of Alcohol-Related Birth Defects

Laura Ronan, M.P.H.

Since the late 1970s, many States have sponsored prevention programs geared specifically to preventing problems associated with drinking alcohol during pregnancy. Evidence that heavy drinking may result in substantial fetal damage and that moderate drinking may also be associated with elevated risk has provided the impetus for such efforts. Many researchers investigating this risk factor suggest that it receive the highest priority possible in the formulation and implementation of information programs, preventive counseling, and followup. They also urge that preventive counseling be initiated before conception and directed toward the adolescent female before alcohol becomes a problem (Elliott and Johnson 1983).

Intensive prevention efforts are vital because there is no known way to reverse or reduce many of the effects of alcohol on the fetus once they have occurred. The New York State Division of Health estimates that infants born with alcohol-related birth defects in a single year cost the State's economy $155 million in lifetime care (Rey 1985). (For additional information on the economic cost of alcohol-related birth defects see article, page 38.)

Many programs implemented at the State level have drawn on the findings of programs previously supported by NIAAA and others. For example, the Fetal Alcohol Demonstration Program that was funded by NIAAA in 1978 and conducted at the University of Washington combined a mass media campaign aimed at the general public with telephone messages, distribution of brochures to populations of women who were pregnant or contemplating pregnancy, counseling sessions for pregnant women, and a training program on drinking and pregnancy for appropriate professionals. Referral services were also provided for pregnant women and mothers with alcohol problems (see article, page 34). A forerunner to the Washington program was a secondary prevention program conducted at the prenatal clinic of Boston City Hospital between 1974 and 1979 (see article, page 32).

In addition, the 1982 NIAAA nationwide public education campaign included a component on alcohol-related birth defects that generated considerable public information activity at State and community levels. Some related campaigns were the direct responsibility of States or of organizations under contract to the State. They undertook public education activities statewide, regionally, and at the local level. In other States, the campaigns were led by either a group of volunteers or a combination of volunteers and contract staff. Many States continue to make available campaign materials such as brochures, public service announcements, and posters.

A Comprehensive Approach

Prevention efforts aimed at reducing alcohol consumption by pregnant women have increased significantly in recent years, but additional efforts are needed to increase awareness and to change attitudes and practices. It is generally agreed that comprehensive programs implemented at the community level are the most successful for educating prospective mothers. The experience of several States demonstrates that such programs may be effectively developed and sponsored by State agencies. Furthermore, State involvement may assure program visibility and the integration of programs delivering maternal and child health services.

Based on the experiences of several States, this article describes the major components of a FAS/FAE prevention program. It is intended to stimulate new programs and innovative ideas, not to prescribe one course of action. The ultimate aim of an FAS/FAE prevention program should be to reduce the number of new cases. In order to do this, it must enhance awareness and foster acceptance of the evidence that consumption of alcohol during pregnancy can have deleterious effects on the fetus. Becky Beardsley, Program Coordinator of the Lincoln Council on Alcoholism & Drugs (LCAD), Fetal Alcohol Syndrome Prevention Program in Lincoln, NE, underscores the importance of bringing assistance to the alcohol-abusing woman rather than concentrating narrowly on the severe consequences to the fetus. In fact, some observers attribute the relative proliferation of programs focused on this particular period in a woman's life—pregnancy—to the view that maternal drinking is a public health program (Little and Ervin 1984).

A prevention program with a comprehensive approach to reducing the incidence of alcohol-related birth defects considers all females of childbearing age or younger, the general public, and helping professionals. The goals of the Pennsylvania Project for Prevention of Fetal Alcohol and Drug Effects, which operated from 1982 to 1983 as an outgrowth of a local two-county project conducted by the Washington-Greene Prevention Corporation from 1980–1982, involved all of these groups. The commitments of this

This infant is a low birth weight baby. State programs aim to increase awareness that maternal alcohol use can result in low birth weight and deleterious fetal effects

project were to encourage women of childbearing age to avoid alcohol and unnecessary drugs during pregnancy; to urge women with drinking problems to seek and accept treatment; to influence health, social service, and education professionals to provide education on alcohol and drug effects to all patients, clients, and students prior to and during pregnancy; and to intervene with high-risk women (Yancosek 1982).

Target Groups

The education of women is vital regardless of the intensity of their drinking, to permit them the opportunity to make informed decisions about alcohol consumption during pregnancy. Becky Beardsley of the Nebraska LCAD Fetal Alcohol Syndrome Prevention Project has distinguished three subgroups of women as target audiences for information and intervention: high-risk, moderate, and low-risk (Table 1). Each of the cells in Table 1 describes a level of risk based on the drinking and/or pregnancy status of the individual. The low-risk cell, for example, describes the person neither currently drinking nor pregnant. Reinforcing the decision not to consume alcohol if pregnant is the thrust of prevention for the low-risk group. Public information efforts, school health education, and health professions curricula are also strategies for reaching women considered at low risk (Beardsley et al. 1985).

Program Structure

The Nebraska LCAD Fetal Alcohol Syndrome Prevention Project utilizes a program framework based on primary, secondary, and tertiary prevention modalities for each stage of the maternal-child health continuum (i.e., preconception, prenatal, intrapartum, and postnatal) (Table 2). Primary prevention encompasses activities that target low- and moderate-risk women. These efforts can include teacher training for junior and senior high school teachers, public information and education, and professional education for health and human service workers. Primary prevention may also entail curriculum development and consultation with curriculum developers associated with educational institutions.

Secondary prevention consists of professional training and consultation with health and human service workers. Training includes information and individual consultation on the identification of high-risk (alcohol- and drug-abusing) women, especially pregnant women, and intervention counseling techniques. Trained personnel may directly assist physicians and other health professionals in directing intervention efforts. Tertiary prevention consists of providing referral information and guidance for alcohol-abusing women and affected children. It might also include a support group for women with FAS/FAE children as well as legislative activities (Beardsley et al. 1985). The program components just identified will be discussed further in the article.

Caregivers in the intrapartum and postnatal periods may need to be reminded of secondary and tertiary prevention. Even a woman who has been drinking during pregnancy should stop doing so to protect her baby from further alcohol-related birth risk during the remainder of the pregnancy

Table 1. Maternal Child Health Care Continuum

Prevention Levels	Preconception	Prenatal	Intrapartum	Postnatal
Primary	1) General Public Information efforts 2) Jr. & Sr. High (curriculum) 3) Medical/nursing schools curriculum maternal alcoholism & FAS/FAE 4) Education geared to young girls	1) Public information media directed toward pregnant women 2) Professional education for health professionals re: alcohol effects on fetus 3) Prenatal literature focusing on alcohol's role in pregnancy	1) Professional education for health professionals re: alcohol effects on fetus	1) Data collection of possible affected child 2) Public information for women in childbearing ages 3) Professional education for postnatal health providers
Secondary	1) Identification & intervention of problem drinking women in childbearing years (esp. adolescent girls)	1) Prof. education to identify & intervene with problem drinking women 2) Physicians to utilize data collection on drinking patterns 3) Documentation of possible alcohol problem for intrapartum & postnatal health care providers' awareness	1) Prof. education to identify & intervene with problem drinking woman 2) Utilization of drinking history to identify possible complications of newborns and problem-drinking woman	1) Prof. education to identify & intervene with problem-drinking woman 2) Utilization of drinking history to identify affected child and problem-drinking woman
Tertiary	1) Referral of women in childbearing years to appropriate alcohol & drug treatment services	1) Referral of problem- drinking woman to alcohol/drug services	1) Referral of problem-drinking woman to alcohol/drug services 2) Prof. education re: referrals for affected child	1) Referral of problem- drinking woman to alcohol/drug services to prevent further affected children of identified mother 2) Referral of affected child to appropriate service 3) Development of support groups for affected families

Source: Beardsley, B., Gillespie, T. and Williams, M.J. Prevention of Fetal Alcohol Syndrome/Fetal Alcohol Effects: A Comprehensive Approach. Paper presented at National Council on Alcoholism Conference, Washington, DC. 1985.

(Rosett and Sander 1979).

In some States, the alcohol and drug abuse division, a governor's commission, a local affiliate of the National Council on Alcoholism, or a categorically funded program has sponsored an FAS prevention program. In Vermont, the program was incorporated from its inception into the department of health's health education-risk reduction program as part of a conscious effort to use existing resources and service delivery systems that would be ongoing (Nystrom 1983). In Nebraska, Maine, and North Carolina, the State councils of developmental disabilities funded countywide pilot projects. It is anticipated that these States will expand their efforts statewide and establish FAS/FAE as a permanent component of their prevention programing.

Local FAS/FAE prevention projects should develop comprehensive programs tailored to the specific needs of the locality. In some States, programs have been implemented at the local level by organizations (e.g., prevention resource centers) under contract to the State. In others, county councils on alcoholism or alcohol services of mental health departments have taken responsibility for implementing programs. Volunteer groups and volunteers working with employed staff have successfully run some program components, such as media efforts and speakers' bureaus. Women with FAS/FAE children have been extremely valuable volunteers.

Advisory Committees

Advisory committees have served as catalysts in some States. In others, they have provided guidance once a prevention program was funded. Networking with other organizations is essential for any prevention program and can be facilitated by an advisory committee with a broad range of representatives. Members can be involved as a group or as individuals in needs assessment, planning, fundraising, program presentation, public relations, and other functions. In addition, the committee can serve the project by providing credibility among the members' specific constituencies. Membership should include representatives from the following groups:

- ☐ Health professionals—obstetricians, pediatricians, drug and alcohol treatment specialists, nurses, obstetrics clinic coordinators, nurses, school nurses, community education specialists, inservice coordinators, hospital and outpatient administrators, and social workers;
- ☐ Community groups—women's organizations, March of Dimes, Association for Retarded Citizens, Mental Health Association, PTA, community drug/alcohol prevention task force, Lamaze and other childbirth groups, LaLeche League, self-help groups;
- ☐ Schools—junior and senior high schools, colleges, nursing, medical, technical;
- ☐ Media—newspapers, radio, TV;
- ☐ Political and government leaders; and
- ☐ Volunteers—other interested groups.

Needs Assessment

In order to define the program's specific objectives and to enable evaluation of the program's efforts, the existing level of knowledge, attitudes, and practices should be measured. Vermont, for example, surveyed a small percentage of prenatal care providers, including the most sophisticated obstetrics practice in the largest city. The Vermont Department of

Table 2. Target Groups of Women in Childbearing Years

		PREGNANT	
		Yes	No
Drinking	Yes	**High Risk** *Secondary prevention* (intervention aimed at alcohol/drug abstinence during course of pregnancy. *Tertiary prevention* (referral and support group) to minimize adjustment difficulty.	Appropriate referral would be made to existing agency.
	No	**Moderate Risk** Since these women are currently pregnant, not using alcohol/drugs, *primary prevention* efforts aimed at reinforcing that as well as skill to maintain.	**Low Risk** *Primary prevention* efforts at reinforcing a choice of alcohol/drug-free lifestyle while pregnant if woman chooses to become pregnant

Health also conducted a statewide telephone survey of 300 randomly selected women of childbearing age. Only minimal costs, for computer time, were incurred (Nystrom 1983). The Pennsylvania Project for Prevention of Fetal Alcohol and Drug Effects used questionnaires mailed or directly administered to randomly selected women (Yancosek 1982).

In order to determine the extent and the nature of the problem and to obtain a base of information upon which a prevention program could be developed, Maine commissioned a study. The four objectives of the study were:

- To determine the state-of-the-art of the State and national level;
- To identify effective education and prevention strategies and activities;
- To develop a proposal for a long-term prevention model program; and
- To identify constituencies with the duties, responsibilities, or interest in prevention strategies (Mullen and Anderson 1985).

Existing statistics may also be useful in estimating the extent of the problem, although data about the incidence and prevalence of FAS/FAE are often flawed because of misdiagnoses. Information on demographic factors, births, infant deaths, fetal deaths, rate of alcoholism, number of women admitted for treatment, and other data is generally available through the State's division of statistics or a health planning agency. Such information should assist in understanding the effectiveness of current educational efforts and in identifying sources of information and advice related to the effects of drinking alcohol during pregnancy.

Professional Education

Many State FAS/FAE prevention programs have strongly emphasized professional education of physicians and other health care providers. Education of professionals is most effective when directed at both medical and nonmedical personnel concerned with the health and welfare of women and children. The overall goals of such education efforts are to increase knowledge of alcohol-related birth defects, to stimulate awareness and interest in the problem and prevention efforts, and to activate preventive and therapeutic behaviors such as:

- Patient or client education;
- History taking concerning alcohol and drug use;
- Diagnosis of maternal drinking and other drug problems;
- Intervention and and referral for alcoholism and drug treatment; and
- Diagnosis of FAS and other prenatal drug effects in children.

Many State programs have "kicked off" their professional education for physicians and other health professionals with a symposium, a workshop, or a conference. A forum that includes a local pediatrician, an alcohol/drug women's counselor, a family therapist with expertise in the areas of women's alcoholism and FAS/FAE prevention and, if possible, nationally recognized researchers in the field offers a valuable opportunity for introducing the many dimensions of this problem. Typically, physicians prefer to receive information from other physicians in the same specialty.

More extensive training sessions might be held at local hospitals, nursing schools, medical assistant training programs, and conferences sponsored by related organizations. Inservice sessions can be provided to Women, Infant, and Children (WIC) nutritionists, public school nurses, public school teachers, drug/alcohol counselors, Head Start staff, welfare caseworkers, and others concerned with maternal and child health.

As part of the New York State Division of Alcoholism and Alcohol Abuse (NYSDAAA) campaign in 1980, FAS information packets were mailed to 1,000 obstetricians and gynecologists. The packets contained a reprint from a prestigious medical journal describing FAS, an outline of the criteria for the diagnosis of alcoholism, photographs of FAS cases, patient brochures, posters in English and Spanish on drinking while pregnant, a patient alcohol and health self-test, a referral list for problem drinkers, a referral list for affected children, and patient pamphlets on alcohol abuse. In addition to mailing out the information packets, NYSDAAA-sponsored medical conferences and grand rounds around the State on FAS and alcohol-related birth defects. Over three-fourths of the physicians who reported receiving and reading the NYSDAAA FAS information packet considered the items useful. However, data on physicians' intervention efforts suggest that additional efforts are needed to motivate and assist many obstetricians and gynecologists with implementing a system for screening their patients routinely for problem drinking and to identify and refer those who are in need of special treatment for alcohol abuse (Russell et al. 1983).

Referral and Support Services

Once health and other professionals have received training about the problem of alcohol-related birth defects, they may need assistance in counseling, referring, and treating women and children. The Nebraska LCAD Fetal Alcohol Syndrome Prevention Program, for example, has responded to requests for assistance with designing screening and risk assessment tools. The services of qualified program staff have also been made available to assist with intervention and with counseling alcohol-abusing pregnant women. Referral information is provided to professionals who have identified either a woman abusing alcohol/drugs or affected children. A resource center providing up-to-date materials and information (e.g., audiovisuals, books) is also a service of inestimable value to persons in the field.

National Coalition Combats Infant Mortality

The principal threats to infant health are birth defects that can lead to lifelong handicapping conditions and problems associated with low birth weight. Birth defects are responsible for one-sixth of all infant deaths. Each year approximately 240,000 American babies are born with birth defects. In about one-fourth of these cases, the cause is currently thought to be purely genetic; in one-tenth, purely environmental. In the remaining one-third, the cause is unknown (U.S. Department of Health and Human Services 1979). Although many birth defects cannot be prevented, many more might be avoided by providing prenatal information and care to women at higher risk.

Infants with low birth weights are in particular danger; two-thirds of infants who die weigh less than 5 pounds 7 ounces (2,500 grams) at birth. Today, approximately 7 percent of all babies are of low birth weight (U.S. Department of Health and Human Services 1984). Underweight babies are more vulnerable than normal-weight babies to mental retardation, developmental difficulties such as slowness in walking or talking, growth problems, and central nervous system disorders. Again, many preventable maternal factors are associated with low birth weight: lack of adequate prenatal care, poor nutrition, smoking, alcohol and/or drug abuse, age of the mother (especially immaturity), and social and economic background. In addition, women least likely to receive adequate prenatal care are often those most likely to have other risk factors working against a healthy pregnancy.

In the Fall of 1981, seven national agencies and organizations, including the U.S. Public Health Service, founded the Healthy Mothers, Healthy Babies Coalition to improve the health of pregnant women and the health of their unborn and newborn babies. Today, more than 70 voluntary, professional, and government health agencies and organizations belong to this national coalition.

In addition, most States have started their own coalitions to expand the effort on the local level. Achievement of the goals of the network depend largely on provision of high-quality prenatal, obstetrical, and neonatal care; preventive services during the first year of life; professional education; and broad public information activities aimed at pregnant women and their families. Some of the specific goals of the Healthy Mothers, Healthy Babies Coalition are the following:

- ☐ To supply information that encourages healthy habits for pregnant women and women planning pregnancy;
- ☐ To motivate pregnant women to protect their health through regular prenatal care and good nutrition;
- ☐ To increase women's understanding of specific health risks and the importance of taking responsibility for healthy childbearing; and
- ☐ To increase understanding among men of the supportive role they play in pregnancy and infant care.

Since 1981, the coalition has encouraged low-income women to obtain consistent prenatal care and adopt good health behaviors while pregnant. A series of posters and information materials describing healthy behavior during pregnancy and designed especially to reach low-income women were distributed to clinics nationwide. Low-income and other women have been reached through recorded public service announcements narrated by the Surgeon General, produced by the Public Health Service, and distributed to radio stations across the country by local March of Dimes chapters. Other materials include a curriculum guide on education for responsible childbearing, a directory of educational materials on prenatal and infant care, and a handbook on how to start a community coalition similar to Healthy Mothers, Healthy Babies.

The members of the Healthy Mothers, Healthy Babies Coalition make valuable contributions as participants on committees that address such issues as breastfeeding, substance use, genetics, and motivation of low-income women. The substance use subcommittee (membership includes representatives of the National Council on Alcoholism and the National Institute on Alcohol Abuse and Alcoholism) has recently been formed to help reduce the number of alcohol-related birth defects and the proportion of women of childbearing age who smoke during pregnancy. Another of their objectives is to increase awareness of the hazards of pharmaceutical products and other drugs during pregnancy and lactation.

This subcommittee's first project is the development of a resource package that includes both professional and client education material in the area of substance use during pregnancy. Contents of the package include policy statements from major health-related organizations; synopses of landmark research papers; an annotated guide to patient education materials; sample exemplary brochures and posters; and a counseling and referral guide for use by providers. The package is directed to influential health professionals and organizational representatives working in the maternal and child health area and is designed to increase information and counseling for patients as well as to improve recognition and referral of substance abuse problems to appropriate treatment centers. The format of this package is similar to an earlier one developed by the coalition to encourage health professionals to promote breastfeeding among their patients.

During the Spring of 1985, the Coalition's subcommittee on low-income women conducted a survey of 20,000 health care providers and others working with pregnant low-income women to determine effective ways to reach the target population and to encourage women to improve their health and that of their babies. The results of the survey will be compiled to provide a compendium of program descriptions and contact persons. ☐

For further information about the Healthy Mothers, Healthy Babies Coalition and its publications, contact: Executive Secretariat, Healthy Mothers, Healthy Babies, 600 Maryland Ave., S.W., Suite 300-E, Washington, D.C. 20024

Offering consultation services to health professions educators interested in updating their curricula to include FAS/FAE prevention information is another support service provided by the Nebraska project. Some schools may want to include presentations by project staff as well (Beardsley et al. 1985). Nursing schools appear especially receptive and play a key role in disseminating current FAS/FAE information to health professionals.

To ensure that information is accessible, the North Carolina project operates a 24-hour telephone information service available to anyone with a question about FAS or about alcohol consumption during pregnancy. An answering machine records messages received when staff is not available to answer the hotline.

Community Education

Reaching the general public, especially women of childbearing age, with information about alcohol-related birth defects is a major thrust of most FAS/FAE prevention programs. Such public education campaigns should not be limited to women of childbearing age; informed mothers, friends, spouses may also serve as informal educators. Print materials, community education programs, and mass media are complementary and reinforcing modes of communication that reach a broad cross-section of the community.

Posters and pamphlets are the most common print materials developed and distributed by FAS/FAE prevention programs. Many States have received permission from existing programs to adapt materials and messages that have proved effective. The article in this issue on disseminating information (see page 54) suggests appropriate messages for women and physicians. Some excellent locations for placing such materials are doctors' offices, pharmacies, laboratories where pregnancy tests and premarital and pregnancy blood tests are taken, marriage license bureaus, social service agencies, church bulletins, maternity clothing stores, children's clothing stores, shopping mall displays, State liquor stores, supermarkets, family planning services, health clubs, WIC nutrition programs, laundromats, prepared childbirth classes, YWCAs, other women's clubs, beauty shops, and many other places frequented by women (Yancosek 1982).

Presentations that provide more detailed information through the use of speakers and audiovisuals are effective mechanisms for increasing awareness. Such programs can be offered to the membership of existing organizations, clubs, and groups such as childbirth education classes, LaLeche, PTAs, and YWCAs. All presentations should emphasize the positive aspects of healthy pregnancies rather than the negative aspects of birth defects. (Information about films, pamphlets, and other materials may be obtained from the National Clearinghouse for Alcohol Information.) Some communities have established a speaker's bureau composed of experts on various aspects of FAS/FAE who have indicated an interest in making presentations on the subject.

Newspapers, radio, television, and magazines are also useful channels for communicating information about alcohol-related birth defects. In 1982, the National Institute on Alcohol Abuse and Alcoholism (NIAAA) developed radio and TV public service announcements and distributed them nationwide to county drug and alcohol programs and radio and television stations. Newspaper sample articles and detailed talk show interview scripts were also distributed. Some of these materials are still available for distribution by contacting NIAAA. These and similar locally developed materials are the ingredients for a mass media campaign that might be conducted over a 3-month period every year or every other year. The Christmas-Hanukkah season and Mother's Day are particularly appropriate times for such campaigns.

School Programs

Drinking frequency and amount remains at alarmingly high rates among high school women as does the incidence of teenage pregnancy. To ensure that information on alcohol-related birth defects reaches teenagers before alcohol is a problem, it should be incorporated at all levels of education under the heading of preventing developmental disabilities. The Nebraska alcohol-and-drug school curriculum, as well as others in the Nation, includes junior and senior high school units on alcohol, drugs, and pregnancy. Most States, however, do not include such information in the elementary school curriculum. In school systems where alcohol-related birth defects are not addressed, the prevention program might encourage the department of education to develop such a component.

The Maine prevention program worked with four area institutions for higher learning. Activities included 10 FAS/FAE presentations; public service announcements through college radio stations and newspapers; and visual and narrative materials placed in health centers, dormitories, sororities, and fraternities. All human service programs sponsored by these colleges agreed to integrate information about FAS/FAE into their course materials (Mullen and Anderson 1985).

During the 1985-86 fiscal year, Pennsylvania will implement a comprehensive program aimed at increasing awareness among youth about the harmful effects of alcohol consumption during pregnancy. This initiative will include regional workshops for relevant school personnel, the development of a five-unit curriculum for grades 9–12, and a video training tape on screening and interviewing techniques for obstetricians, gynecologists, and nurses.

Conclusion

This discussion has provided an overview of the core activities of an FAS/FAE prevention program. As mentioned earlier, once training and inservices have been provided, a prevention program should continue to provide ongoing services as an information and referral source. Periodic training is, of course, necessary to reach newly identified providers. Those projects that emphasize the health of the mother as well as the fetus will have a full agenda.

Here is a sampling of activities for those interested in pursuing additional prevention strategies:

- ☐ Provision of technical assistance to the State Department of Education curriculum development task force and membership on the Department's task force on chemical dependency and special education;
- ☐ Recruitment, training, and deployment of a core group of physicians interested in the prevention and treatment of FAS/FAE to provide training to their colleagues through hospital departmental staff meetings, regional and State medical association meetings, etc.;
- ☐ Collaboration with the Developmental Disabilities Council to identify groups/agencies with the capacity to support effectively families who are experiencing the trauma of having a disabled child;
- ☐ Establishment of a diagnosis registry for FAS/FAE. ☐

Turn to page 76 for references.

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X.

ALCOHOL RELATED BIRTH DEFECTS: IMPLICATIONS FOR EDUCATION

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ABSTRACT

This article emerges from a larger study of preventive approaches for Alcohol Related Birth Defects (ARBD) prepared for the New York State Department of Education. The author contends that in addition to clearly identifiable Fetal Alcohol Syndrome children, there is a continuum of impairment to the offspring of drinking mother that is dose related and produces serious behavioral/learning deficits. The conti includes young people of normal intelligence who perform below expected lev find school adjustment difficult. School and community agencies need to c studies to determine the nature and extent of impairment and the kind of interventive and preventive action that should be instituted. To that end s article gives information on the background and nature of ARBD and some suggestions to guide development of programs.

Alcohol is a teratogen. Animal and human studies of maternal use of alcohol during pregnancy suggest a continuum of fetal impairment ranging from severe mental retardation and growth abnormalities, what is commonly called the Fetal Alcohol Syndrome (FAS) to lesser physical and mental defects.

Estimates of prevalence of Alcohol Related Birth Defects (ARBD) range from one in every seven to eight hundred births for the full syndrome to three to five in a thousand births for partial FAS effect. Attempts to determine the number of "normal" children suffering from milder forms of impairment lack preciseness, but the figure might be as high as one case in every 150 births. Whatever the count, ARBD joins Down's Syndrome and Spina bifida as leading causes of birth defects.

IMPLICATIONS FOR EDUCATION

Quite obviously, there already exists sufficient information on ARBD to warrant full prevention programs in all schools and special interventive programs for youngsters identified as FAS children. To meet problems associated with

compiled by S. D. Clarren and

lower alcohol related birth defects, communities need to initiate or foster studies analyzing the extent and nature of developmental impairment. There appear to be children sitting in classrooms who are considered normal in intelligence, but [illegible] well below the expectations of parents and educators. The profile of such a child would approximate the following description.

1. Scores normally or above on intelligence tests.
2. Does not achieve or work effectively.
3. Tends to be fidgety, hyperactive, inattentive.
4. Has attention deficit disorders.
5. May show some of the facial/physical irregularities common to FAS children.
6. Falls behind other children in terms of intellectual development.

Using a more sophisticated or precise profile, schools, local hospitals (pediatricians and nurses), clinics, and other interested agents might want to study children with those characteristics and those without to compare statistically the incidence and nature of maternal drinking. Those directing the study might then reverse the study by seeking out a specified number of non-drinking or light-drinking mothers, a sample of moderate drinkers, and a group of chronic users and compare data. Findings from both studies could then be viewed against data emerging in the literature. If a positive relationship between maternal drinking and poor learning performance emerged from the study, the school involved would have supporting data for implementation of prevention and intervention programs.

As an aid to school directed action, some ideas basic to ARBD are listed.

1. Increased drinking rates in America over the past three decades, particularly by women, appear to have produced higher incidence of alcohol related birth defects.
2. Alcoholism produces consciously tragic consequences for the individual involved. Maternal alcoholism brings tragedy to the unborn, the innocent.
3. What is often called "social drinking" may actually be rather heavy and steady use of alcohol with negative consequences for the offspring of maternal drinkers.
4. Chronic maternal drinking before and during pregnancy results in morphologic problems for offspring. The first six to eight weeks of gestation are most critical for fetal development. Abstinence or very limited use of alcohol during that period should be the rule. Mothers should also avoid use of alcohol if the child is to be breast fed.
5. Data suggests that abstinance for the greater part of a year prior to conception may be necessary for the alcoholic mother who wishes to minimize risk of ARBD.

6. Approximately one third of the offspring of chronic alcoholic mothers have full FAS effects. Seventy-five per cent have partial effect. Impairment appears to be dose related. Use of cigarettes, caffeine, and other drugs as well as poor nutritional habits increase the risk of damage to offspring.
7. Most attention has been given to children with full or partial FAS impairments. It is conceivable that the more significant problem for education is the larger number of unidentified children suffering alcohol-related behavioral and learning disorders and resultant school or learning difficulties.
8. Small quantities of alcohol can produce reduced birth weight and behavioral problems in offspring. Perhaps 30 to 40 per cent of prospective mothers believe that moderate, occasional, or "special occasion" heavy drinking during pregnancy is safe.
9. Pregnant women tend to drink less during pregnancy, particularly during the first trimester. The decrease is direct proportional to the amount of alcohol consumed prior to pregnancy. Chronic drinkers continue to drink more heavily than moderate users. Binge drinking (five drinks or more on an occasion) increases in heavy drinkers even though overall consumption may be reduced.
10. Though studies of paternal drinking are not conclusive, there is [illegible] evidence that drinking by fathers may be related to impairment in offspring. More study is needed.
11. Schools have the largest concentrated community of prospective parents. These young people ought to be assessing information for themselves and helping to educate their peers and elders.
12. Schools have the plant, equipment, educators, and on-going health oriented programs as resource bases for effective prevention programs.
13. Teaching about ARBD and the effects of teratogenic agents generally may have effective motivating value for youngsters in school-based health education programs.
14. Schools could broaden educational efforts by incorporating ARBD modules in various continuing education programs.
15. Schools should take the lead in attempts to foster unified community action programs which would tie together the efforts and resources of the university, community and school.
16. Alcohol-related birth defects cut across racial, class and environmental factors. Maternal drinking before and during pregnancy needs no help in producing obvious and subtle developmental problems for children.

It is encouraging to note television and radio programming aimed at problems associated with maternal drinking. It is discouraging to report that family clinics often do not collect data on the drinking habits of the prospective mothers they serve or that they make little use of the data once in hand. Obstetricians are

reluctant to question too strenuously the [illegible] patterns of patients. Consequently, follow-up of a "normal" child born of a drinking mother gets lost in the transfer from maternity ward to family doctor or pediatrician.

School administrators are generally aware of fetal alcohol problems but there is minimal transfer of that awareness to the implications of those problems for child development and school programming. Efforts by the author to locate schools with significant prevention/intervention programs went unrewarded. School officials turn away from suggestions that they spearhead, encourage, or involve themselves in studies designed to analyze the consequences of maternal drinking for education. They are interested but only at the cognitive level. Hopefully, data emerging from childhood studies being conducted at pediatric centers and emphasis through the media will move school officials to bolder activity.

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How Alcohol Affects the Developing Fetus

Some observations about the normal and abnormal physiology of the pregnant woman who drinks. These reflections make it clear why we should all read the Holy Bible more carefully.

by CORTEZ F. ENLOE, JR., M.D.

When Dr. Iber wrote in the January February, 1971 issue of *Nutrition Today* that "In Alcoholism, The Liver Sets the Pace," he helped us understand why drinking more than a moderate amount of alcohol causes the beverage to escape the detoxifying system of the liver and reach the developing fetus. The fetal alcohol syndrome or FAS, as it has since come to be known, had not been recognized at the time of Dr. Iber's report. There can be little doubt, however, that as he pointed out, the rate at which the liver can spare the body the damage of alcohol is "a linear function of time." He provided us with the clue to the fact that once alcohol consumption reaches a stage in which the alcohol blood level in the portal circulatory system between the digestive tract and the liver exceeds the capacity of the liver to detoxify it, trouble is sure to occur. The excess alcohol passes on into the general circulation and the person becomes drunk. And drunkenness is a primary cause of crime, of automobile accidents, of fatal crashes by private airplanes, and, now it seems, it may also be a principal cause of mental retardation and birth defects by making the fetus drunk. This then is reason enough to look at the pathologic physiology in the pregnant woman who drinks.

Dr. Enloe is the editor of Nutrition Today *magazine.*

At first blush one could easily be suspected of trivializing a serious matter when they observe that the pregnant woman who craves the psychologic release of a cocktail would do well to eat while she drinks. There is sound medical reasoning behind this advice because by eating as she sips, she slows the absorption of alcohol, or ethyl alcohol, or to be exact, ethanol, to use the contraction, from her stomach into the portal circulatory system. The slower the absorption rate, the better the chance that the liver will be able to break down the alcohol and keep it out of the general circulation.

As Dr. Iber pointed out, the moment one takes a drink, the alcohol that first reaches the stomach is quickly absorbed. However, if one then nibbles a bit of cheese or a mini-frankfurter hors d'oeuvre absorption is slowed. And the greasier the tidbit the better, because the presence of fat slows absorption of alcohol through gastric mucosa. By these willful acts – sipping drinks slowly and eating all the while – the liver, which has only a limited capacity to detoxify and metabolize any agent, is given an opportunity to reduce alcohol from the stomach into innocuous acetaldehyde and acetic acid, and these two substances subsequently break down into carbon dioxide and water. This chain of events is clearly established. It is only part of the routine activity of the liver, a large, busy factory alive with metabolic chemical reactions that break down nutrients and other chemicals absorbed from the stomach and intestine into less complex units so the body can use or dispose of them.

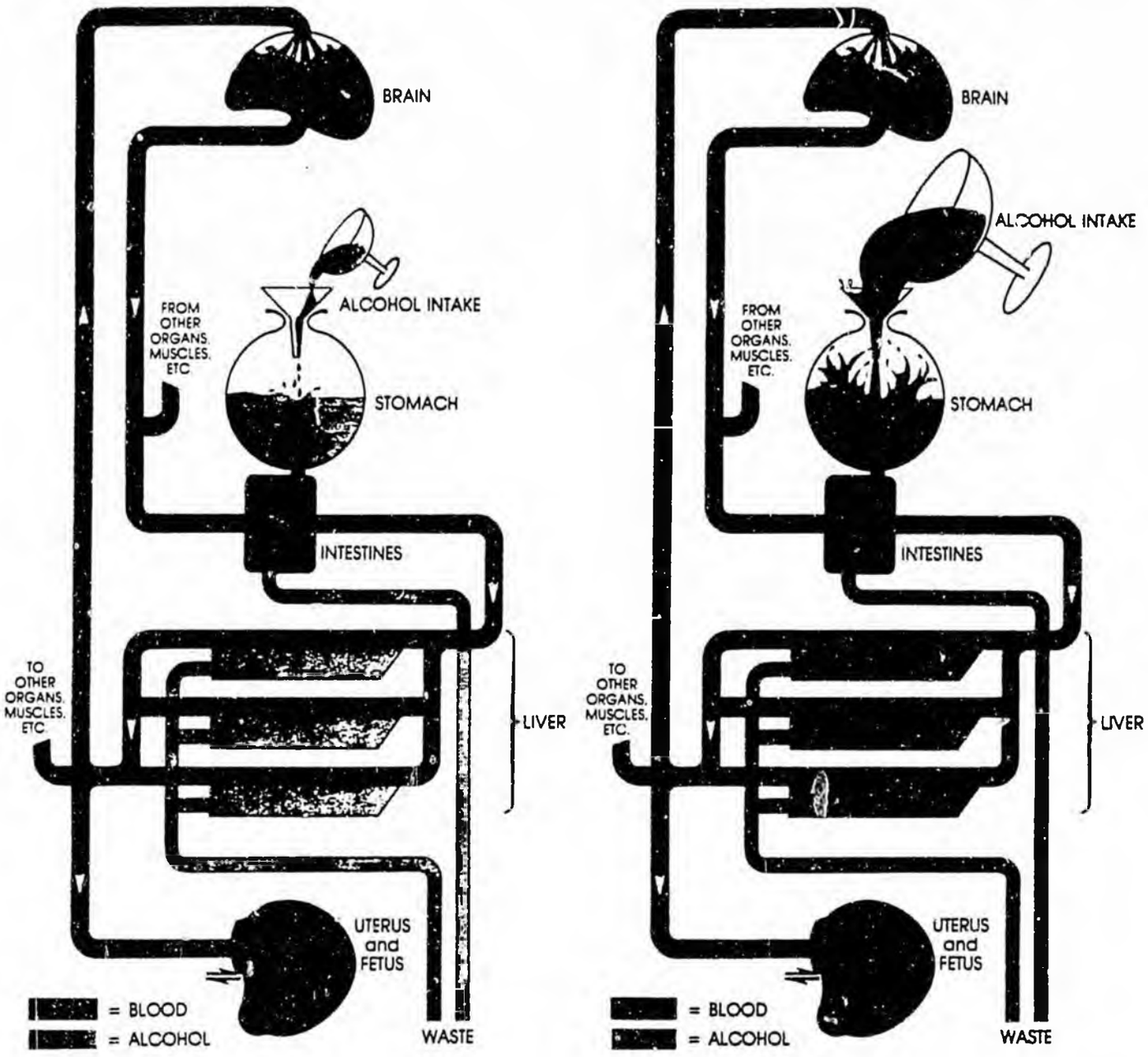
PORTAL PROTECTION

This emphasizes the virtues of the portal system because through its vessels everything that leaves the stomach or the small intestine must first go to the liver before it can pass into the body's general circulatory system. However, as Dr. Iber pointed out, the trouble is that the liver's capacity is limited and inflexible. As he told us, in the case of alcohol, the liver can handle about ten milliliters an hour. Or, to put it another way, it means that it will take the liver of the average person from five to six hours to fully oxidize the alcohol in four ounces of whiskey or two and one half pints of beer. This is why three drinks at lunch puts President Carter's mythical executive off his beat for the afternoon. This can only be avoided if one were to spread their alcohol intake of such drinks evenly over four hours' time, an unlikely event because then they would get little or no kick from drink at all.

The trouble begins when the liver receives more alcohol than it can handle. It simply lets the excess pass into the general circulation and picks out that which it can detoxify at its leisurely pace as it passes back through the liver. Thus it permits the host to enjoy the intoxicating pleasures of alcohol until the organ has time to pick it up and reduce it to carbon dioxide and water. If the amount is such that the transfer of acetaldehyde exceeds

Low rate of alcohol intake. The liver is able to "filter" the mother's blood, removing the alcohol before it can enter he circulatory system and affect her brain and t' e fetus.

High rate of alcohol intake. The threshold of the liver's ability to treat the continuing high level of alcohol in the blood is surpassed. As the blood enters the mother's circulatory system it continues to carry alcohol with it, suffusing her brain and the fetus with this toxic substance.



Schematic diagrams showing the threshold characteristic of the liver's ability to metabolize alcohol carried in the blood. When the threshold is exceeded—when the liver cannot cope—the alcohol carried through the mother's circulatory system suffuses her brain and the fetus.

female sex hormone over a period of time, then suddenly withdraw it, and it will be observed that the ovaries have ceased to produce their normal amounts of estrogen.

This habit of a cell to lose its basic function when that function is distorted or replaced by external factors, is one of the dangers of giving excessive amounts of cortisone to the person who still has a functioning adrenal cortex that manufactures the same hormone.

It is reasonable, therefore, to suspect when the cells of the developing fetal reticulum are bathed with desiccating alcohol they soon adapt to that state wherein the abnormal becomes to them the normal. This might be called the phenomenon of the wisdom of the cell.

The fact that the brain in both the adult and the de' loping baby has a rich supply of blood means that a majority of the alcohol-laden blood soon reaches the most easily damaged area. In the case of the fetus, we have known for some time that the alcohol in the blood of the mother easily crosses the barrier from the decidua (the temporary lining that forms in the mother's uterus to hold the placenta of the baby in place) into the placenta and thus heads for the organ that has the highest coefficient of affinity for alcohol of any organ in the body.

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ALCOHOL AND PREGNANCY

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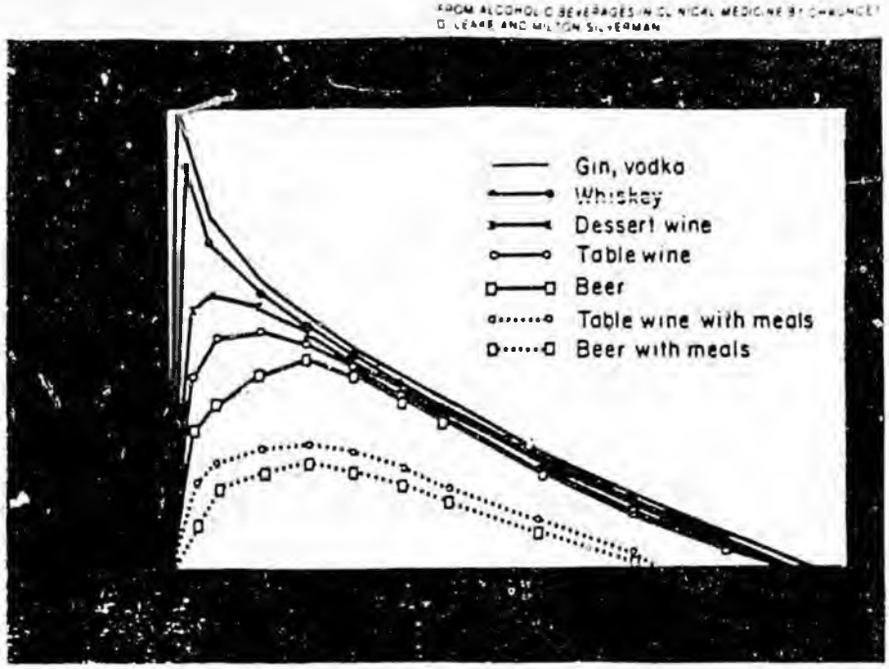
the body's capacity, the acetaldehyde concentration increases and that's what causes a hangover.

The blood-alcohol curve chart dramatically depicts the effect of food on absorption rates of various spirits. The chart was compiled by one of the greatest practical pharmacologists, Chauncey D. Leake, Ph.D. (For more information about Dr. Leake, see the May/June, 1975 issue of *Nutrition Today*.)

The alcohol that circulates freely in the blood waiting to be detoxified reaches all of the body's organs and has a special affinity for the brain and the person becomes intoxicated. In the case of the pregnant woman something else also occurs. In her case there's also the baby growing within her body to be thought of. The simple answer is that it too receives its share of alcohol. The amount of the concentration of alcohol that the baby is bathed in, and keep in mind that we are speaking of raw ethyl alcohol, regardless of whether it comes from wine, spirits, or beer, depends on three things. First, how much the mother drinks, of what kind of alcoholic beverages the mother has consumed; second, in what period of time she drinks it; and third, whether she slows the emptying time of her stomach by eating as she drinks. If she has sipped a martini containing, say, one and one-half ounces of gin over a period of two hours—an unlikely feat for a martini drinker—all the while nibbling on cheese hors d'oeuvres, the baby may not be damaged. Any faster drinking, or no food of consequence, however, and the fetus is sure to get an alcohol bath.



Typical blood-alcohol curves resulting from ingestion of various spirits, wines and beer, each at amounts equivalent to 0.6 gm of alcohol per kilogram of body weight.

BATHTUB GIN

This point was made very clearly long, long ago when, as Dr. Iber tells us, it was clearly stated in the Bible as an admonition to pregnant women.

As is so often the case in medical discovery, now that we know what happens in the fetal alcohol syndrome, looking upon the basic effect of alcohol on the tissues, it is hard to understand why medical scientists were so slow in realizing that ethyl alcohol is bound to injure the virtually defenseless tissues in the developing fetus.

Consider this fact, that we physicians overlooked. In the very first university courses in general chemistry, students are taught that alcohol is a dehydrating agent. It has an inexplicable capacity to absorb water without markedly increasing its own volume. As anyone who made "bathtub gin" during the prohibition era knows, one has to use *more* than a pint of water and a pint of ethyl alcohol in order to obtain a quart of gin. Here two pints don't make a quart because the alcohol absorbs some of the water. (Chemistry will ignore the few drops of juniper juice that are added for flavor!) This phenomena is usually demonstrated in beginning college chemistry when the instructor will mystify his young audience by taking a beaker with 100 milliliters of water and a beaker with 100 milliliters of alcohol, mixes them in a large graduate and lo and behold the resulting volume is not 200 milliliters but only about 185 milliliters. The alcohol behaving like a liquid sponge has simply absorbed some of the water. This ability of alcohol to absorb water is the reason that it stings abraded tissue. It simply draws some of the water out of it. It is the reason why raw alcohol will irritate the lining of the stomach after sufficient exposure and explains why drunkards frequently suffer from gastritis. It is also as good a reason as we can think of why the brain of a child of a drunken mother is smaller than the brain of a normal child. In an autopsy, as accompanying photographs show, the brain of the child that has been exposed to alcohol can best be described as appearing desiccated. It may also be a reasonable biochemical explanation why that same child is retarded. They simply do not have the same amount of brain tissues as do normal children because alcohol has withdrawn some of the fluid from the developing brain cells and they have died or remain functionless.

BIOLOGICAL COMPUTER

In the adult, alcohol damages the brain cells in a similar manner. In so doing it slows the passage of nerve impulses. The neurological reticulum of the brain is particularly affected. This is the part of the organ which can be compared to a biological computer that receives the signals of the remainder of the brain, coordinates them, and sends them back to their proper place. In the fetus this is the portion of the brain that first develops. In the adult, when alcohol depresses the activity of the reticulum the signals going to the cortex, which regulates thought, become disorganized. This is the reason that a drink or two releases man from his inhibitions. This slight disorganization, which enhances release from serious thought, is what has made alcohol attractive to man since the beginning of time. After loss of inhibitions, another drink or two will begin to affect the motor process. This explains why the person who drinks first loses tempermental restraint and says more than he ought to before he reaches the stage where his speech becomes slurred and his motor coordination causes him to have trouble putting one foot properly in front of the other.

The fetus doesn't think or walk. Nonetheless, it is reasonable to suppose that the developing reticulum or the mental computer that is constantly bathed in ethyl alcohol soon adapts to that milieu. Short circuits develop and no amount of education in later life can realign them.

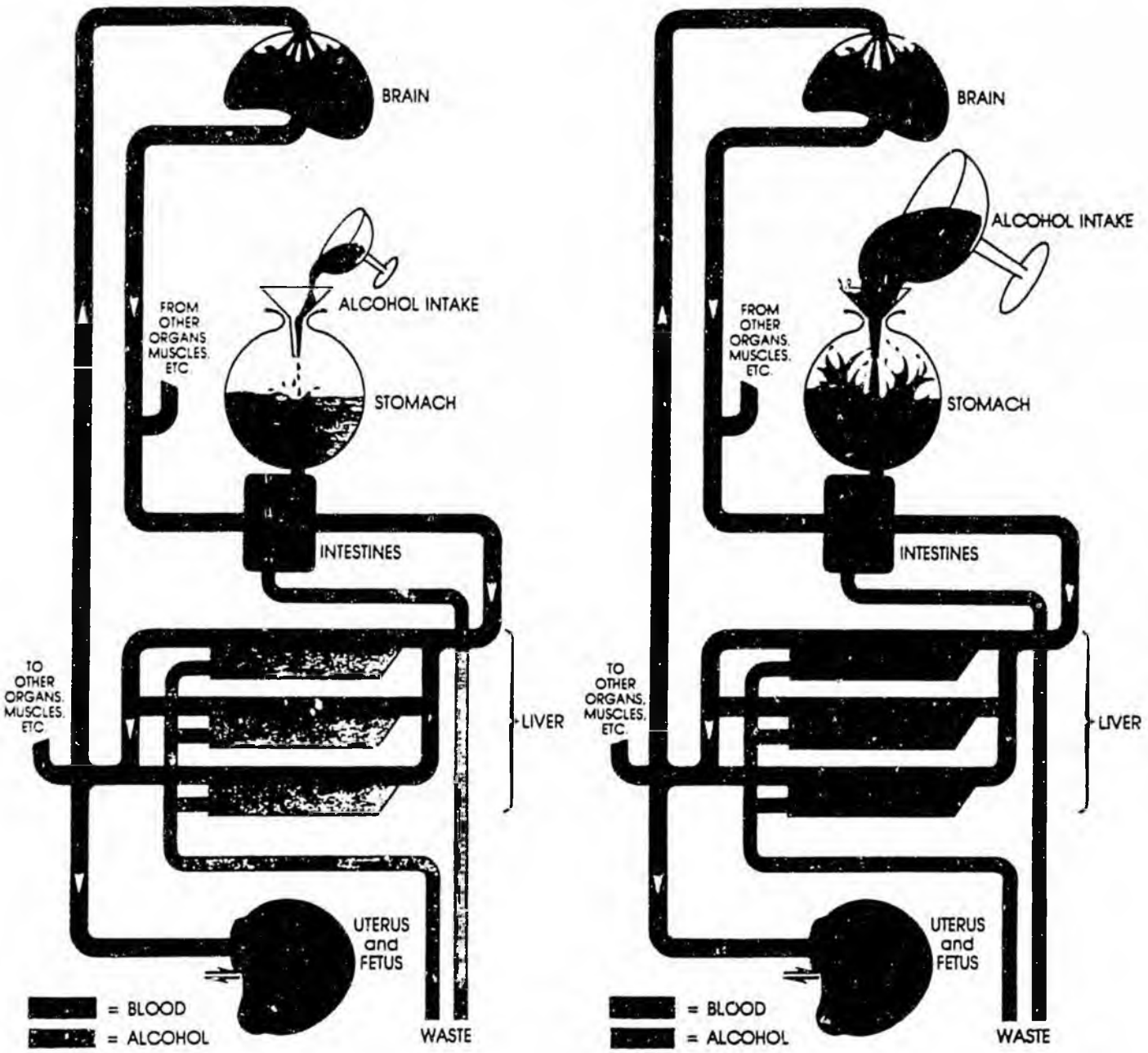
In making this adaptation to the alcohol environment the cells are following a pattern of growth and behavior that is one of the established facts of human physiology. They are doing the same thing that the muscles of the arm do when it is put into a sling. Those muscles, being unused, quickly begin to atrophy and waste away. Once the sling is removed, the muscles have to be retrained by physical rehabilitation.

THE CELL'S WISDOM

We can see the same phenomenon at work in the endocrine system. Give a normal animal or woman large doses of

Low rate of alcohol intake. The liver is able to "filter" the mother's blood, removing the alcohol before it can enter her circulatory system and affect her brain and the fetus

High rate of alcohol intake. The threshold of the liver's ability to treat the continuing high level of alcohol in the blood is surpassed. As the blood enters the mother's circulatory system it continues to carry alcohol with it, suffusing her brain and the fetus with this toxic substance.



Schematic diagrams showing the threshold characteristic of the liver's ability to metabolize alcohol carried in the blood. When the threshold is exceeded—when the liver cannot cope—the alcohol carried through the mother's circulatory system suffuses her brain and the fetus.

female sex hormone over a period of time, then suddenly withdraw it, and it will be observed that the ovaries have ceased to produce their normal amounts of estrogen.

This habit of a cell to lose its basic function when that function is distorted or replaced by external factors, is one of the dangers of giving excessive amounts of cortisone to the person who still has a functioning adrenal cortex that manufactures the same hormone.

It is reasonable, therefore, to suspect when the cells of the developing fetal reticulum are bathed with desiccating alcohol they soon adapt to that state wherein the abnormal becomes to them the normal. This might be called the phenomenon of the wisdom of the cell.

The fact that the brain in both the adult and the developing baby has a rich supply of blood means that a majority of the alcohol-laden blood soon reaches the most easily damaged area. In the case of the fetus, we have known for some time that the alcohol in the blood of the mother easily crosses the barrier from the decidua (the temporary lining that forms in the mother's uterus to hold the placenta of the baby in place) into the placenta and thus heads for the organ that has the highest coefficient of affinity for alcohol of any organ in the body.

NATURE'S WONDERS

Nature does many wondrous things to protect the growing fetus from the careless behavior of the mother in whose womb it nestles. The uterus is a mighty muscular fortress that protects the infant from even the most extraordinary mechanical injury. One might have thought that nature would have made the placenta a bit more discriminating and not let the alcohol cross the barrier into the baby's tissues, but this is not the case. It seems that nature might have provided this protection because there is not intermingling of the mother's blood and fetal blood. One of the first things that occurs when the ova of the female is inseminated by the sperm of the male and cell division and growth begins is that a circulatory system begins to form. This can be seen in the fetus that is only a few days old, when it is little more than a small cluster of cells. This very primitive circulatory system begins immediately to carry nutrients to the cluster and to deliver metabolic waste back to the mother so it can be discharged. The waste, for example, goes back to the placenta, which is partial to the fetus although it is connected to the fetus by the long umbilical cord villi that extend out from the placenta into the blood rich decidua and the chemistry is such that a discharge and interchange takes place. On the inward bound voyage vitamins, minerals, proteins in assimilable state, carbohydrates, fats, oxygens, and other nutrients cross the barrier into the fetus. In the outward bound trip the arteries of the fetus waste products from its own metabolism to the villi from which they cross the barrier and are picked up and carried away by the venous system of the mother to be discharged by urination, defecation, and respiration.

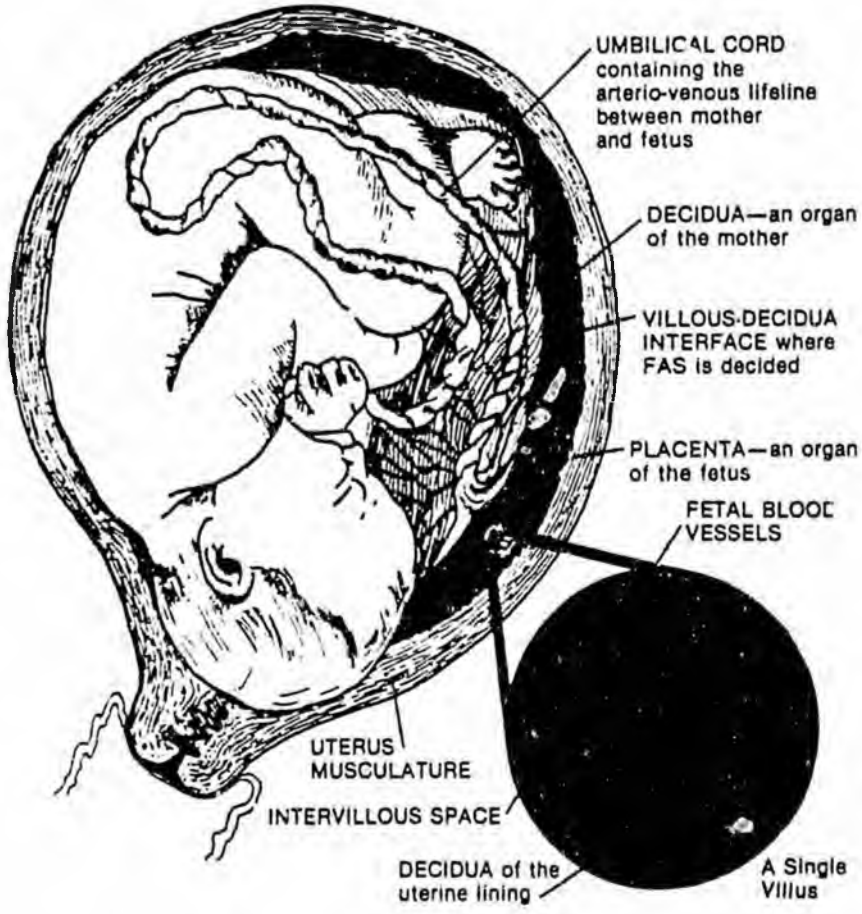
OTHER TOXICANTS

Unfortunately the fetus also passes along many drugs, at least one of which, thalidomide, an otherwise perfect sedative, has terrifyingly harmful effects on the fetus, as we learned from the sad experiences of the early 1960s. The placenta also offers no barrier to some gas products which are of no benefit to the baby. This is why smoking by a pregnant woman carries with it certain hazards that we do not yet understand. We know this because research has shown that shortly after a pregnant woman inhales the smoke of a cigarette, methemoglobin can be identified in fetal blood. No one is sure what damage this abnormal hemoglobin can do, but the informed suppositions leave no room for comfort. The only thing that is certain at the present state of our knowledge is that this is not pure hemoglobin circulating in the fetal vessels, but is an abnormal substance.

The same can be said about the pregnant woman drinking caffeine-bearing coffee. This alkaloid also passes the placental barrier interchange. Again, the state of our knowledge does not provide evidence that for the pregnant woman to drink a modest amount of coffee is harmful. The knowledge, however, does raise the question of whether the fetus can withstand the impact of the same serum concentration of the caffeine as does the fully developed human body. We have a long way to go before we have certain knowledge of what drugs and stimulants the pregnant woman can safely consume.

We don't know how to account for the way that alcohol selectively disfigures the infant anatomically. That too must be left to further research.

The organs of even a young child are composed of cells that are mature. This, to us, means that the cellular systems are highly developed and have practiced patterns of metabolic behavior and chemical interchange. The developing cells of the fetus are not old enough to have the protection of such experience. We know now the mechanisms by which some of these permanent changes take place. Considering these facts, the wonder is that drunken babies born of drunken mothers are not complete idiots. The ability of the delicate tissues to withstand the day-in and day-out bath of a strong dehydrating agent is a tribute to nature. As we have seen, the placenta, a wonderfully organized temporary organ, exercises little or no filtering effect to protect the fetus. Since the cellular structure of the infant is immature and fragile, it is not too much to say that a drunken mother carries in her swollen uterus a drunken baby. After she has become drunk she usually has a hangover. That will pass away in a few hours. For the fetus, the hangover may last a lifetime.



The fetus when it is about to become a baby. Note that the fetal blood vessels do not make contact with the mother's circulatory system. Thus all exchange must transpire through the decidual and villous cell walls. They determine what shall and what shall not pass. Ethyl alcohol, unfortunately, is allowed to pass.

This is a teaching aid article. Price and delivery dates are available on request. For institutions and anti-alcohol programs, bulk prices will be available at a discount. Ordering information will be ready by January 1, for delivery after February 1.

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ALCOHOL AND PREGNANCY

THIS IS A TEACHING AID ARTICLE

Fetal Alcohol Syndrome

An astute, perceptive authority has recently discovered a large gap in medical and nutrition knowledge. He may also have found a way to prevent the greatest single cause of birth defects.

by FRANK L. IBER, M.D.

Considering how long men and women have been drinking alcoholic beverages, it is surprising that it is only seven years now since the medical profession first realized – no, awakened would be a better word – to the fact that when the pregnant woman drinks she may be causing her baby to suffer irreversible birth defects.

Medical researchers have not yet had time to learn all of the answers to questions raised by the discovery that a direct association between alcohol and birth defects exists. However, such a gap offers no solace, nor does it offer a reason to discount the existence of this connection. It can now be stated with the utmost conviction that while all of the defects caused by drinking have not yet been identified, we do know

- that the ingestion of alcoholic beverages (ethanol, ethyl alcohol) interferes with normal pregnancy,
- that the effects on the fetus are permanent,
- that whether they occur or not is a matter of the basic metabolism of both the pregnant woman and the fetus,
- and, worst of all, that the deleterious effects of alcohol in pregnancy may be more prevalent in the western society than we now recognize.

Drinking under any circumstances interferes with many complex systems of the human body in both men and women, so it should not be surprising to us today to learn that drinking during pregnancy harms the unborn child. For some reason this possibility was ignored by the medical profession. We certainly had plenty of warning. Way back in biblical times Judaic observations as set down in the Holy Bible spoke of the then prevalent belief that alcohol would cause birth defects. In the book of Judges, 13:7, for example, it says "behold, thou shalt conceive and bear a son, and now drink no wine or strong drink." This, it turned out, is better medical advice than physicians have been giving since.

Then in the middle of the last century, Charles Dickens, the British novelist, observed that children born of mothers who were chronically drunk were frequently mentally defective. This good advice, like so many of Dickens' social observations, was ignored by the medical profession.

This sad state of affairs persisted until 1973 when a remarkably perceptive Seattle physician noticed that babies born of alcoholic women were frequently and uniformly malformed and often grew to become children who were mentally retarded.

The physician is David W. Smith, M.D., of the Department of Pediatrics of the University of Washington in Seattle. It was Dr. Smith who first noticed the phenomena. He was the first to describe it accurately, and it was he who named this scourge of babies today the fetal alcohol syndrome or FAS for short.

We don't yet know to what extent the defects are dependent on the amount of alcohol consumed, but it does appear that the pregnant woman does not have to be a full-blown alcoholic in order to give birth to a baby that grows up retarded or a child that exhibits one or more of the characteristic FAS deformities when it is born. It does seem reasonable to believe that drinking any amount of alcohol in excess of the level to detoxify it will put the fetus at risk.

In the alcoholic mother-to-be alcohol evokes its harm in part because she has a tolerance to many of the behavioral effects that prompt less experienced drinkers to curtail their intake before they suffer the flagrant symptoms of drunkenness. Alcoholics, on the other hand, usually get their intake up to more than 100 grams of ethanol a day. This is equivalent to at least eight beers, a little less than a pint of whiskey, or more than a bottle of wine. This amounts to about half of the caloric intake in such drinkers. Thus the likelihood of malnutrition (which also affects the fetus) is enhanced. Furthermore, the addiction causes many things to occur that influence her sexuality, fertility and, as we now know, thanks to Dr. Smith and his perceptive colleagues, her pregnancy. As for sexual behavior, light drinking increases sexual desire but heavy drinking impairs it. It impairs judgment, a fact

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Dr. Iber wrote for Nutrition Today *readers in our January/February, 1971 issue: "In Alcoholism, the Liver Sets the Pace." The 1971 article, as well as the article appearing here, are also available as teaching aids.*

Characteristic Anatomical Defects that are Signs of the Fetal Alcohol Syndrome

Small head circumference

Low nasal bridge

Epicanthic folds

Short palpebral fissures, obscure the canthus, or inner corner of the eye, a normal feature in certain species of the Mongolian race

Short nose

Small midface

Indistinct philtrum, an underdeveloped groove in the center of the upper lip between the nose and the lip edge

Thin reddish upper lip

Epicanthus is a characteristic of the eye where a vertical fold of skin extends from the root of the nose to the inner termination of the eyebrow, sometimes covering the inner canthus. It's presence is normal in certain of the Mongolian races but a telling [illegible] in FAS

David W. Smith, M.D. is a pediatrician from Seattle to whom the world is indebted for having been the first to identify and catalog the signs and symptoms of the fetal alcohol syndrome. He shares the credit with many associates.

that could certainly cause her to neglect to take contraceptive pills, and make the alcoholic all the more likely to become pregnant. Add to this the fact that the addiction is expensive. For some women who do not have the money, it makes it easier for them to sell their sexual favors to support their addiction. Menstruation, ovulation, fertility, and even the ability to carry a pregnancy are heavily burdened by excessive drinking. Despite all of these impediments, however, alcoholic women all too frequently do become pregnant. Whether more addicts have more unwanted pregnancies than do normal women I do not know, but the circumstances are certainly stacked for that to be so. Given the widespread use of alcohol by women of child-bearing age and the connection between the habit and FAS, the outlook is not bright.

Consider this. In North America, nine out of ten women of child-bearing age are said to drink occasionally. The most reliable statistics also indicate that seven out of every ten of these women drink regularly, which is to say that they have a cocktail every evening, for example. Most surprising of all is that one out of twenty women in this same critical age group is a confirmed alcoholic. So we can see that social behavior and custom add to the likelihood of FAS.

LABORATORY RESEARCH

In the search to explain the phenomenon Dr. David Smith observed in human infants, animal studies have since been done. This laboratory research shows clearly that it is the alcohol and not the

An editorial about Dr. Smith and his discovery will be found on page 16.

The pathologic physiology of alcohol and the fetus are discussed by C. F. Enloe Jr., in a separate article appearing on page 12 of this issue.

activities of the mother that cause birth defects. Alcohol interferes with organ development, even when the nutritional status of the animal is maintained in a fully adequate manner.

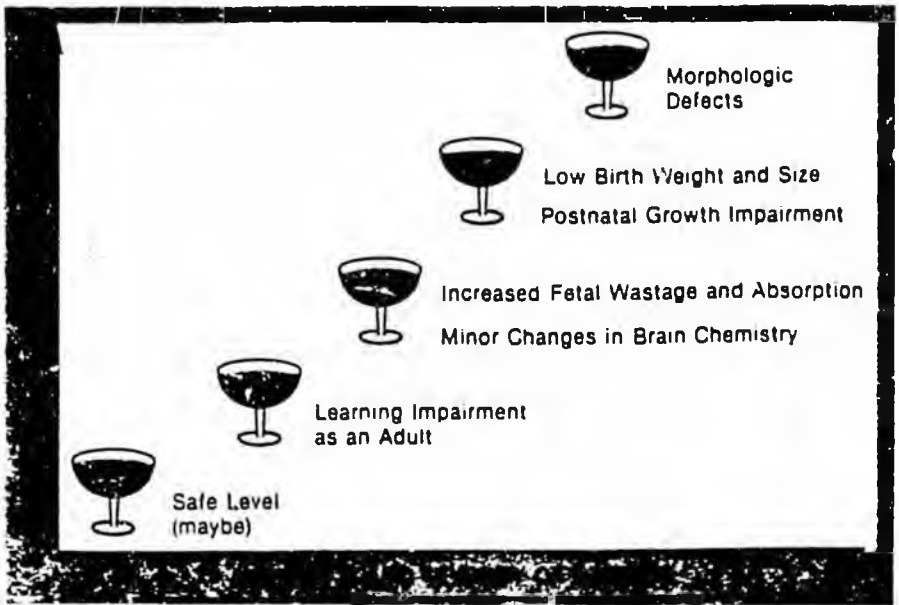
Two types of experiments have been conducted.

Since animals will not voluntarily consume half of their total calories as ethyl alcohol, it has been necessary to mix the alcohol in a liquid diet so that the animal is left no choice but to consume the alcohol in the food or starve. Most species of experimental animals cooperate. When such diets are fed to female rats, mice, hamsters, and chimpanzees that have mated, they produce offspring whose brain is underdeveloped and whose heart, limbs, and kidneys are frequently malformed. When the dose is changed the number of malformations varies likewise. One may assume that such teratogenic defects are related to the intensity of the exposure to alcohol. These effects appear to be most marked if alcohol is added to the animal's diet during the period of pregnancy when organs are being formed. On the other hand, curiously enough in an additional experiment such effects have been seen with regularity when alcohol is administered and the blood-alcohol level of the animal is elevated immediately prior to conception.

Male chauvinists will be relieved to learn that no deleterious effects have been observed in offspring conceived when the male's alcoholic blood level is elevated, a not entirely infrequent occurrence. Thus it can be said that it is the amount of alcohol circulating in the woman's blood that's crucial.

The most exciting recent data reveals new (and disturbing) information about the learning ability of rats and mice born of mothers who have been on diets containing only relatively low levels of alcohol. Anatomically, such infant animals appear in every way to be normal. However, when tested at various stages in later life, it becomes obvious that their learning ability is impaired. Mice experiments just mentioned offer persuasive evidence that the degree of impairment appears to correlate with the amount of alcohol that the mother ingests. It ranges from slight to marked impairment in the ability to learn as demonstrated in such standard tests as shock avoidance, maze running, and complex tasks of adaption experiments that are well characterized in rats. This evidence should be a solemn warning to the seven out of ten women who are not alcoholics but who have a drink or two each day.

Animal experiments using miniature swine who ingest alcohol readily with food, and who are also fecund, have also produced interesting results. From such models important pieces of information have been gleaned. For example, alcohol-drinking sows reproduce more frequently. And, as is now to be expected, their offspring are more severely affected with FAS. In one experiment with miniature pigs, one out of four animals in the first litter was severely deformed. In the second litter three out of five pigs showed FAS. In this model, at least, there is a clear dose response, a curve that demonstrates a direct relationship between the amount of alcohol ingested and the severity of the damage to the offspring. Figure 1 summarizes these ideas.



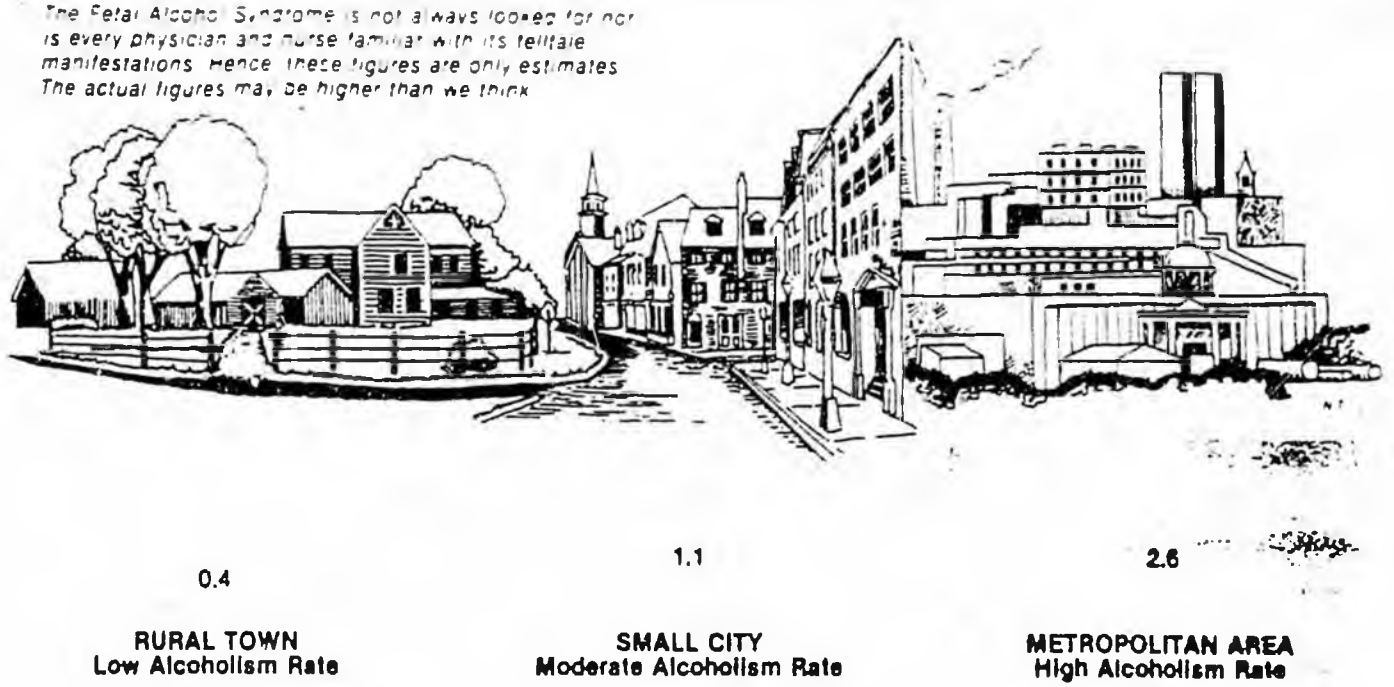


Figure 2. Incidence of the full fetal alcohol syndrome for each 1,000 live births in America

EFFECTS OF FAS

FAS in its most exquisite, full-blown development is revealed in a child by numerous defects in cranio-facial development, in prenatal and postnatal growth, and mental insufficiency. None of these defects correct themselves as the child grows older. Table 1 lists these major features.

This is the type of infant that is frequently born to women who, careful interrogation reveals, admit to having five or more drinks a day (i.e., 60 grams or more of alcohol) throughout pregnancy.

In twins born to alcoholic women some curious inconsistencies have been noticed. For example, three pairs of fraternal twins (those from separate eggs) have been observed in which one twin exhibited all of the physical deformities of the syndrome while the other twin was apparently normal. We do not know whether the second twin showed decreased mental acuity in later life. This suggests that the genetic susceptibility may be important. Otherwise at the present state of our knowledge this inconsistency defies explanation.

The only known affected identical twins, which is to say those from one egg, were equally deformed.

We do not yet know how prevalent the FAS is in America (fig. 2). The main reason is that recognition of the existence of the syndrome is so new that not all physicians have had time to become experienced in recognizing its signs and symptoms. In Seattle, where the syndrome was first defined, and pediatricians have been alert for the longest time, it is estimated that approximately one child is born with FAS in each nine hundred live births. Similar observations in New York City indicate that the incidence is one in each four hundred births. The data suggests that FAS occurs about as frequently as the trisomy 21 Down's Syndrome. Given the fact that it most usually causes mental impairment, the prevalence of FAS may make it the most common birth defect of which we are currently aware. For example, of over eighteen women in Brooklyn, New York, who were identified as having been heavy drinkers during pregnancy, twelve

TABLE 1

Major Features of Fetal Alcohol Syndrome Observed in 245 Advanced Cases

FEATURE	MANIFESTATION	
	Present in over 80% of patients	Present in 50% of patients
Brain injury		
Intellectual	Clear mental retardation	
Neurological	Too small head (microcephaly)	Poor coordination Hypotonia
Behavioral	Irritable in infancy	Hyperactive in childhood
Growth impairment		
Prenatal	Significant reduction in weight and height	
Postnatal	Significant reduction in weight and height	Disproportionately decreased fat stores
Facial Characteristics		
Head circumference	Too small	
Eyes	Short palpebral fissure	
Nose	Hypoplastic philtrum	
Maxilla		Short upturned Hypoplastic
Mouth	Thinned upper vermilion Retrognathia in infancy	Micrognathia or prognathia in adolescence

FROM REF. 9

gave birth to FAS damaged babies. Five of these babies had every one of the deformities of the head and face (i.e., the full syndrome). In other studies of alcoholic mothers from two and one-half to nine percent produced babies with full FAS. From thirty-three to thirty-eight percent produced babies with some of the minor abnormalities. In both such studies, however, mothers who were not alcoholics had less than ten percent of even the minor abnormalities. Thus various studies show that three to twenty-nine percent of the children born to mothers who drink heavily during pregnancy have full FAS, and at least one out of three of the babies in all of these studies have minor congenital abnormalities. Careful mental testing of such children at one year of age would probably lead to the recognition of brain damage in even more children. No doubt in later life an additional group would exhibit learning impairments which are of course difficult if not impossible to detect in the newborn.

The basis of the evidence in these studies that have just been described is the result of interviews where mothers were asked about their alcohol intake. It is not surprising that these women are reluctant to admit to drinking; nevertheless, one of every three women interviewed has been recorded as a moderate drinker. Mothers of deformed infants naturally loathe to admit that their weakness as manifested by drinking might be responsible for the deformities of their child. No study has yet overcome this problem.

Complex epidemiological studies of pregnant women enrolled in prepaid medical care plans, who were followed regularly with self-administered or volunteer-administered questionnaires about their drinking and smoking habits, indicate that spontaneous abortion is also higher in women who take more than two alcoholic drinks a day, as compared to those who respond that they do not drink. The risk to the child of a woman who drinks only once in a while and who then goes on a one night spree, by exposing the fetus at, say, a critical stage of brain development, is not fully considered in most studies, which speak of only average intake. Thus, the full FAS which occurs most frequently in the offspring of alcoholic women who have five or more drinks a day is only the tip of the iceburg of fetal alcohol damage.

Alcoholic women, like alcoholic men, frequently abuse the use of other toxic substances that can affect the fetus. They take more drugs, such as tranquilizers, drink more coffee, and smoke more cigarettes than do other people. They usually consume an unbalanced diet, and have been noted to be deficient in vitamins, minerals, and protein. For this reason the human data relevant to the damaged

PHOTOS COURTESY A. P. STREISSGUTH M.D.

The fetal alcohol syndrome is no respecter of age. Here is the same child at birth (left), at 8 months (center), and at 4½ years of age (right). This child's IQ was from 40 to 45 at each evaluation from 8 months on

viewed with skepticism by many observers when it was first reported. However, the peculiar combination of abnormalities of prenatal and postnatal growth and mental retardation, along with the highly specific animal data, lend strong support to the hypothesis that the FAS is indeed a well defined syndrome that is due directly to alcohol consumption. Epidemiologic investigations about the use of nicotine, caffeine, tranquilizers such as diazepam (Valium), and malnutrition fail to reveal the pattern of FAS when alcohol is not involved.

The original report of FAS by Dr. Smith in 1973 was followed in the short period of three years by the identification of forty-one such affected children in the Seattle area alone. By 1978, five years after the first report, eighty-five children were observed and identified in the university city of Tuebingen, Germany. More than three hundred such affected children have been reported from the major alcohol-using countries of the world. As more nurses, physicians, teachers, and the public become aware of what to look for, we expect that the incidence of recognition will soar. It is now estimated that in the western world throughout which the pattern of alcohol consumption by women is fairly uniform, and where it can be said that the incidence of alcoholism in women is about the same, of every thousand live births one or two will exhibit the full syndrome. Some evidence of the syndrome will be seen in as many as six of every thousand children. There has not yet been time to learn how many children will show some mental retardation in later life because their mothers drink. If the rate is, let's say, only two FAS babies per thousand live births in the United States and Canada, then the number of children so affected is very great. It means that in the United States alone there are at least twelve thousand

PHOTOS COURTESY A. P. STREISSGUTH M.D.

The fetal alcohol syndrome is no respecter of

A characteristic feature of FAS is a smaller head circumference (sketch) than usual (outline)

children born each year with an anatomical and mental deformity and that twelve hundred such babies enter Canadian society each year.

Like all other substances that cause the birth of physically and mentally abnormal offspring, the effect of alcohol is varied by a combination of genetic susceptibility, maternal nutrition or malnutrition, and the intensity of the insult to which the fetus is subjected. As has been said earlier, with only one or two exceptions the advanced syndrome *appears* to occur only in mothers who consume a reasonably large amount of alcohol daily throughout pregnancy or who, from time to time, go on binges of extreme consumption. The mean intake of seventy-two grams of ethyl alcohol daily for those mothers in whom this intake can be measured reveals just how heavily they do drink. In some other studies, the complete syndrome has been noted in those who have four or five drinks a day and average at least forty-five drinks a month. These data should be no comfort to the woman who may have three or four drinks in one evening while she is pregnant and then no more for a day or two, because no data yet exists that indicates a safe level of alcohol consumption during pregnancy. It is quite clear from the animal data measuring impaired learning, and in laboratory species that have been observed, that injury occurs even when lesser amounts of alcohol are consumed than those needed to produce the anatomical deformities of the head and face.

The syndrome in its full blown form has major elements that are easily observed and can be set forth in the accompanying figures and charts. To meet these requirements there must be present elements of brain injury traceable to deficiency in intellectual and neurological growth. These are clearly apparent at age one and thereafter, but are not perceptible in the first year of life. Even at birth, however, it is easy to see that the child with FAS is too small, is not long enough, nor does it weigh enough for an estimated gestational age.

The circumference of its head is even smaller than it should be for the reduced size. These are impairments that remain throughout life. There is no such thing as the FAS child catching up.

This is a teaching aid article. Price and delivery dates are available on request. For institutions and anti-alcohol programs, bulk prices will be available at a discount. Ordering information will be ready by January 1, for delivery after February 1.

Figure three shows a weight and height graph for the syndrome with data obtained during the first year of life in several of these children. In contrast to most other forms of low birth weight and height there is no postnatal catch-up growth. These infants are repeatedly evaluated for failure to thrive and at all times in subsequent growth they remain more than 2SD below the average, with weight usually being more severely impaired. The impaired adipose tissue deposits results in these children remaining skinny. Most studies of the reasons for the impaired size is a prenatal insult to cell proliferation leading to diminished numbers of fetal cells.

The best known symptoms of FAS are the abnormal features one can observe in the face (table 1). They are best understood by postulating that the brain and the part of the face dependent upon a brain of normal size just did not develop adequately to fill out the face. The eyes are too close together. There is the fold that covers the inner corner of each eye, a phenomenon that is normal in

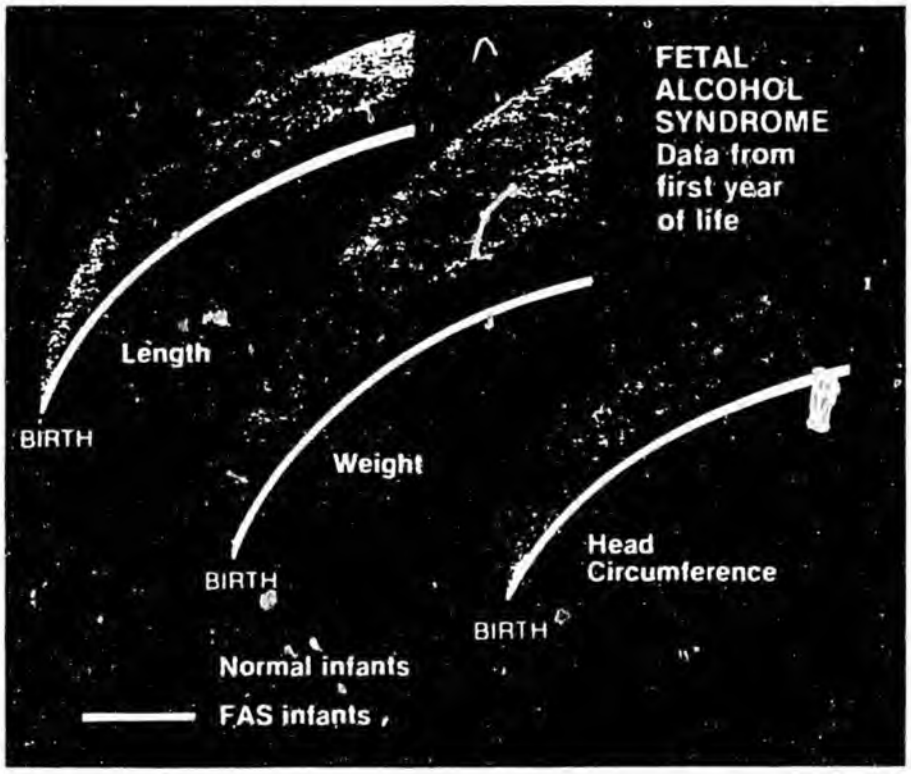
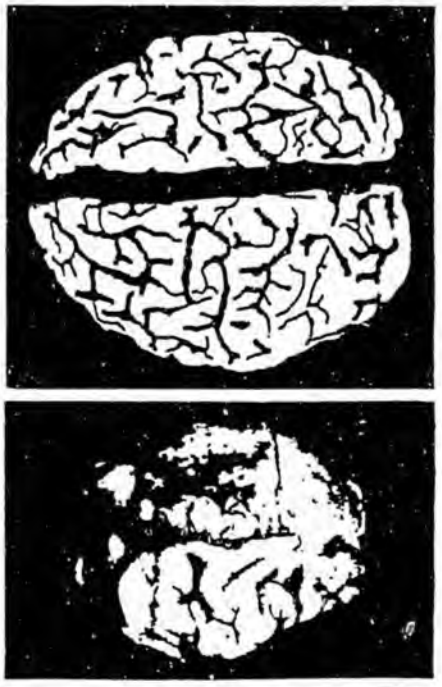


Figure 3. Growth Chart

PHOTO COURTESY S. K. CLARREN, M.D.



Compare the size of the brain of a normal newborn infant with that of an infant with FAS who died five days after birth (lower specimen). The affected brain exhibits a gyral pattern obscured by a leptomeningeal neuroglial heterotopia.

PHOTO COURTESY NFAM

The anatomical defects of fetal alcohol syndrome last a lifetime, as shown by this patient who is seventeen years old.

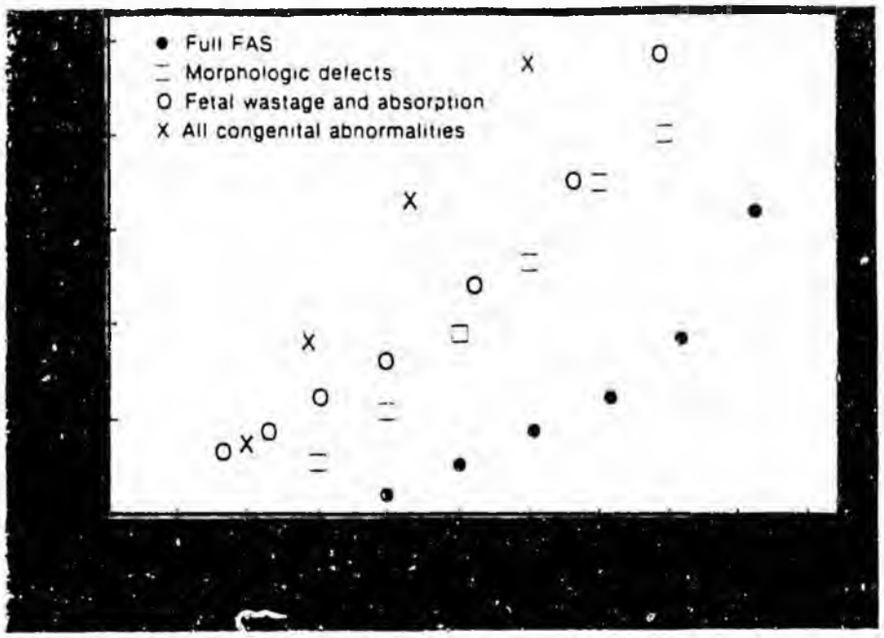


Figure 4 Probable relationship of daily alcohol consumption during pregnancy to the occurence of birth defects.

people of the mongoloid race (and for what reason we do not know). There is virtually no bridge to the nose just before the forehead and the organ itself sits too close to the upper lip. The normal pair of ridges divided by a small valley that extends from the bottom of the nostril septum to the upper lip is absent, and there is a turned upper vermilioned border.

The syndrome is now well characterized in an accumulation of reports that have appeared in the world's literature (table 1).

Studies comparing the intelligence with the prominence of the facial characteristics within the group of fetal alcohol syndrome patients indicate clearly that the more severe the facial characteristics, the more severe the impairment of mental function suggesting that alcohol is responsible for both. A few careful autopsy studies of the brain structure in the fetal alcohol syndrome exist and the cortical cells of the cerebellum and the cerebrum show the most marked abnormalities.

Animal data supports these observations with the findings of cerebral cortical developmental and myelination changes in the fetus exposed to alcohol.

In addition to the facial characteristics noted in the patient illustration and in figure 1 there are many others that are frequent, but a little less common. In the eyes, ptosis, strabismus, and epicanthal folds over the inner angle of the eye are often seen; myopia is a bit rarer. Both posterior rotation and poorly formed ears are seen. In the mouth prominent lateral palatine ridges, cleft lip, cleft palate, and small teeth with faulty enamel are observed. Atrial and ventricular septal defects in the heart have been observed. There are aberrant palmar creases, pectus excavatum, and many other hypoplastic bone and joint abnormalities. Available follow-up studies indicate that the abnormalities are permanent; there is little evidence that the child grows out of it or overcomes the defect.

SAFE CONSUMPTION?

The question is frequently asked, "What is a safe level for alcohol consumption in the pregnant woman?" The most conservative answer is that the thoughtful women contemplating pregnancy would avoid all alcohol from the time of conception until the child is born. The hardest scientific data on the striking structural changes that make up the clear facial characteristics of the fetal alcohol syndrome is that four or five drinks daily should be avoided to possibly forgo the full blown syndrome. The available animal data indicates clearly that one-fifth of the level of alcohol needed to produce major morphological changes will surely produce learning impairment in adults born of alcoholic dams even though they are morphologically normal. Under this circumstance, any alcohol amount approaching one drink each day of pregnancy is of the magnitude to produce this form of damage. The prudent conclusion is that alcohol is undesirable during pregnancy.

It seems clear that the unborn child has the most sensitive of all tissues to alcohol injury. In adults, fifty grams of alcohol per day seems capable of producing liver damage if utilized over many years; lesser amounts of alcohol seem safe. In contrast, half this amount of alcohol to the pregnant woman taken through pregnancy will produce mental changes in the newborn. These ideas are summarized in figure 4.

The fetal alcohol syndrome is emerging as the most prevalent single cause of mental impairment in the Western world. Many exciting programs to recognize drinking in obstetrics and gynecology practices, to educate mothers-to-be of this hazard, and possibly even to label this hazard on alcoholic beverages are under discussion. This syndrome now clearly described in its advanced form will shortly enter the prevention phase. We all await – what really works.

Dr. Iber and the editors of Nutrition Today wish to express their deep appreciation to David W. Smith, M.D., professor of pediatrics and Ann Pytkowicz Streissguth, professor in the department of psychiatry and behavioral sciences, both at the University of Washington, Seattle.

The thanks of everyone, everywhere, should go to Dr. David Smith for his perception in being the first to make us all aware of the signs and symptoms of the fetal alcohol syndrome. – Ed.

SCR

37

STATE OF ALASKA
THE LEGISLATURE

POUCH Y · STATE CAPITOL
JUNEAU, ALASKA 99811
907·465·3800

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May, 1988

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS database CMPR. In order to save space copies of minutes have not been left in the files.

Mary Van Nimwegen

HHESS 4-19-88 8:30 a.m.

Senator Rick Uehling

Senate District H
Downtown, Elmendorf, Northeast Anchorage

Senate Finance Committee
Chair, International Trade Committee
Vice-Chair, State Affairs Committee
Labor & Commerce Committee

March 17, 1988

M E M O R A N D U M

TO: Representative Niilo Koponen, Co-Chair
Representative Johnny Ellis, Co-Chair
House Health, Education and Social Services
Committee

FROM: Senator Rick Uehling

SUBJECT: SCR 37, "Relating to the Young Astronaut Program."

I have asked staff to provide the following background to SCR 37, "A Resolution relating to the Young Astronaut Program."

SCR 37 encourages school districts in Alaska to adopt the Young Astronaut Program by starting Young Astronaut Chapters in their schools.

The Young Astronaut Program is a national educational program for elementary and junior high students designed to promote the study of science, mathematics and technological subjects. It was designed to equip students at an early age with the interest and educational skills to live in the technological world of tomorrow.

Solely financed through private sector support, the program costs are minimal: only $20 per Chapter per year for up to 30 students per Chapter. For that $20.00, teachers receive high-quality, technically up-to-date teaching materials each month. In contrast, a science textbook costs approximately $17.00 per student, thus necessitating an expenditure of approximately $510 for a classroom of 30 students and which would become out-of-date much more quickly.

The materials that are distributed by the Young Astronaut Council are high quality as they are reviewed by the Education and Technology Advisory Board composed of representatives from leading U.S. education and space organizations. Additionally, the materials receive preview from fifty Pilot Schools before finally being nationally distributed to Chapters.

P.O. BOX V, JUNEAU, AK 99811 (907) 465-4821 • 3111 C ST. #515, ANCHORAGE, AK 99503 (907) 561-7613

Young Astronaut Council • 1211 Connecticut Avenue, N.W., Suite 800 • Washington, D.C. 20036 • (202) 682-1985

YOUNG ASTRONAUT PROGRAM

F A C T S H E E T

The Young Astronaut Program is a national educational program for elementary and junior high school students designed to promote the study of science, mathematics and technological subjects. It was initiated as a response to the rapidly declining standard of science and mathematical proficiency levels among graduating American students.

The Young Astronaut Program aims to equip students at an early age with the interest and educational skills to live in the technological world of tomorrow. To this end, the U.S. Space Program is used to excite the natural curiosity of students and instill a sense of fun into learning science and mathematics.

The Young Astronaut Program was conceived by columnist Jack Anderson who proposed the concept to President Reagan. The White House Office of Private Sector Initiatives created the Program which is now administered independently by the Young Astronaut Council and Executive Director, T. Wendell Butler. The Program was launched at the White House on October 17, 1984.

The Young Astronaut Program is solely financed through private sector support. Major contributors are Action Packets, Adidas, Allison Manufacturing, Bantam Books, Coleco, Group W Television, Lee Company, Martin Marietta, Marvel, McDonald's, Monogram Models, Pepsi Cola-USA, Pilgrim Sportswear, Rockwell International, Safeway Stores, Sears, S.P.M. Manufacturing, Sports Specialities, Tasco, Thermos and Tymnet.

Chapters of up to 30 student members are set up in schools or community organizations in which Young Astronauts participate in group learning activities.

The core of the Program is the development and distribution of high quality curriculum material to member Chapters located throughout the country. The materials developed by the Young Astronaut Council are reviewed by the Education and Technology Advisory Board composed of representatives from leading U.S. education and space organizations. The material is also provided to fifty Pilot Schools for in class review before finally being nationally distributed to Chapters.

-more-

In addition to curriculum, each Chapter receives a variety of activity packages such as model rocket kits. Also, Chapters are elgible to participate in writing, art, math and science contests. Prizes for the contests sometimes include trips to the Nation's Capital, Space Camp, shuttle launches and student exchanges to Japan, the Soviet Union and other countries. A feature of the Program available to all Chapters at no additional cost is Astronet, a high-tech electronic mail system which provides timely information on the U.S. Space Program. Astronet also carries supplemental curriculum material.

Although the Program is just over two years old, there are already thousands of Chapters throughout the country. Membership is expanding constantly at a rate of hundreds of new Chapters each month. In addition, there are 126 Young Astronaut Chapters and Satellites in 25 foreign countries.

The Young Astronaut Council has put together a licensing program as the major means of raising funds for the education program. Funds are generated and visibility for the Program enhanced with a line of toys by Coleco, Young Astronaut Childrens books by Marvel, Safeway shopping bags, and special Young Astronaut games and facts printed on McDonald's Happy Meal boxes. Adidas has taken the lead in making a full Young Astronaut apparel line which is now offered in Sears stores all over the country. Other licensed products include telescopes and microscopes, models and science kits, caps, belts, lunch pails, computers and school supplies. Each item is designed to bring the Young Astronaut Program to students throughout the United States.

The Young Astronaut Council recently launched its pre-school program and is currently developing a Young Astronaut Magazine which will be offered to every Young Astronaut.

For more information write: The Young Astronaut Council, P.O. Box 65432, Washington, D.C. 20036.

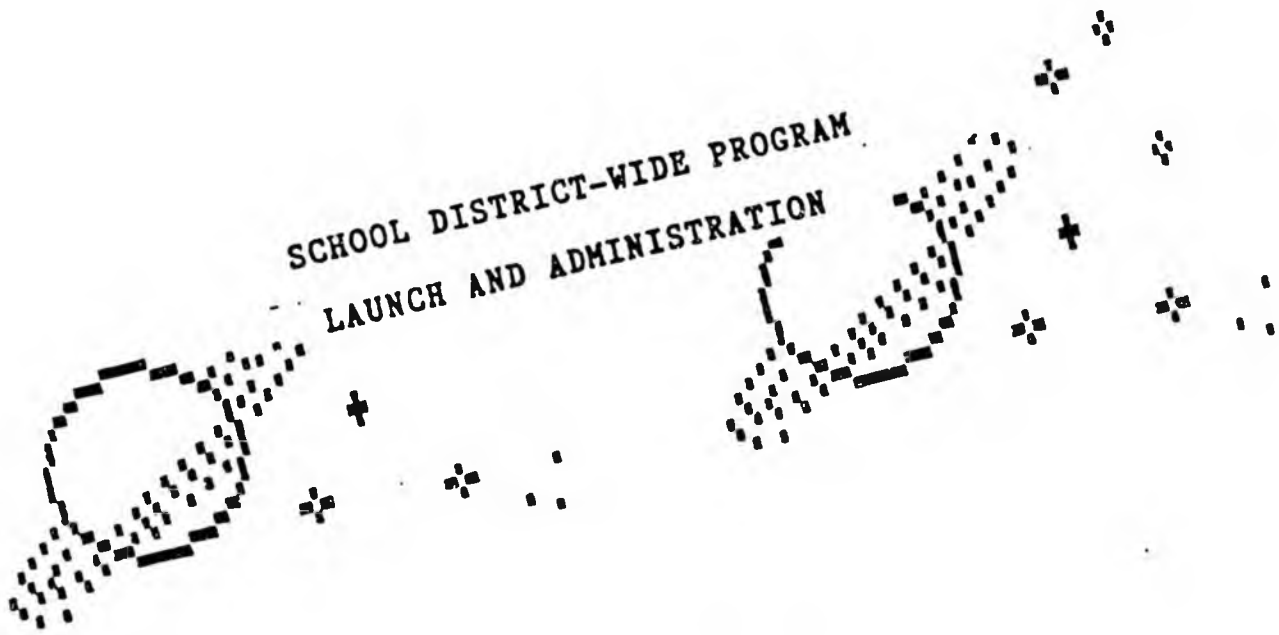
Contact: Edith E. Westermann
(202) 682-1985

# # #

2-10-87

YOUNG ASTRONAUT™ PROGRAM

United States of America



The Young Astronaut Council
1211 Connecticut Avenue, N.W.

Young Astronaut Council • 1211 Connecticut Avenue, N.W., Suite 800 • Washington, D.C. 20036 • (202) 682-1985

The Young Astronaut Program is a co-curricular, national education program for elementary and junior high school students in grades 1-9. It is administered by the Young Astronaut Council, a non-profit, private sector, national education organization. The Program is designed to promote the study of science, mathematics, and technology, using the excitement and motivation generated by the space exploration program. The centerpiece of the Program is the curricular materials distributed to Chapters (5 to 30 students in the group), headed by adult Chapter Leaders/Teachers.

FIVE QUICK POINTS ABOUT THE YOUNG ASRONAUT PROGRAM

1. The Young Astronaut Program is sponsored by the non-profit, private sector funded Young Astronaut Council.

2. School districts signing up as Young Astronaut Districts will receive certificates and special services/recognition.

3. Because the Young Astronaut Program gets corporate support/underwriting for the Program, the cost is only $20.00 per Chapter per year for up to 30 students per Chapter - that's right $20.00 per Chapter! A science textbook costs approximately $17.00 per student or approximately $510.00 for a classroom of 30 students, and there is no way for a textbook to keep pace with the rapidly expanding body of scientific knowledge. The Young Astronaut Program provides topical curricular materials and updates information with "ASTRONET", a computerized system that is covered in the $20.00 membership fee.

4. Teachers receive high-quality, technically up-to-date, teaching materials, each month. The materials are activity-based, with stress on "learning science and mathematics by doing science and mathematics and thinking scientifically."

5. The Chapter Leader's Handbook tells teachers how to set up the fun-filled, science and mathematics, club-like Program that we call Young Astronaut Chapters.

June 1, 1987

Subject: 25 Excerpts from Year-End Comment of Chapter Leaders, May 1987

Included in the Chapter Leaders' responses to the May 1987 curricular questionnaire were the following unsolicited comments on the overall Program:

1. "The Young Astronaut Program is FANTASTIC! I had 100 students wanting to join, just from 4th, 5th, 6th grades. We narrowed down to 32 and each member knows others are begging to join." Judith Dieball, Toledo, OH. (There are many comments using the words, "fantastic", "terrific".)

2. "I feel like the lessons are materials which they can remember and fall back on in life. One instance was the November #3 lesson for Toys That Teach-Roller Skate Cars-Passenger Safety. Many of the children including my own son became instant believers in seat belt wearing. The Nutrition Challenge and the Young Astronaut Fitness Program seem to really interest the students, also influenced a few changes in habits. So the point is besides teaching math, science, technology and interdisciplinary skills, the good common sense of good practical living will follow for a long time. Also, not to mention the learning to work as a team in whatever you do." Connie Havens, Topeka, KS.

3. "The students (and their leaders) have learned a lot about math and science, space exploration and U.S. space history while working with the YA program. It is exciting to see the students have fun while learning, stretching their imaginations and applying what they know." Adrienne Schouten, Sheridan, Oregon.

4. "This program, because of the hands-on nature, has enabled me to utilize it for English as a Second Language, and (for) gifted students with little or no modifications! This program has been a learning experience for me." Morris R. McFadden, Los Angeles, CA.

5. "The goodies like the pop can, posters, packets may not be specifically educational but the motivation and surge of energy that comes with their arrival makes it worthwhile." Robin Eddington, Michigan City, IN.

6. "The materials I have received over the last 3 years have been more than enough. I've shared w/Music, P.E., Art and all educators. I teach children labeled 'Developmentally Handicapped'. My Chapter uses all areas (of the Program). It gives (them) the chance to be good at something." Christine Noland, Dayton, OH.

7. "Your program is the biggest bargain I have found in 18 years of teaching! It does a fabulous job of teaching that science is all around us & that it's fun and so interesting. It really has turned my kids on." Sandra Bagley, Greenway, LA.

8. "I am certain that the Will Rogers Elementary School Chapter of Young Astronauts will produce several astronauts. But, I am more certain that we will produce hundreds and hundreds of adults who are aware of the importance of the space program and who will support it and encourage others to support it." Mrs. Dan Hays, Oklahoma City, OK.

9. "That Program is really important for my Trainees and myself. You should hear them when I have to cancel a session, they beg, implore, etc. for me not to do so. They really enjoy our meetings, and although they haven't started to think in a scientific way (they like to give the first answer that comes to their minds), they have started to give more reasoned answers when they stop and think, and they are doing more of this. The school is more interested in the Program, and the Directors are thinking of including the activities as part of the Science material and then forming one Chapter in each grade. It makes a difference that the Program is done in English, because it helps the students to improve in another language." Dr. Juan Pedro Sanchez, Cancun, Mexico.

10. "SUPERB PROGRAM! Materials are excellent. Please make a list (complete) of Y.A.'s corporate sponsors and addresses. We would like to send 'Thank you' notes. We appreciate their support." Jane A. Sheets, Michigantown, IN.

11. "We love the program. The children are doing some real good thinking and learning." Evelyn Mower, N. Bountiful, VT.

12. "I'm really excited about the potentials of this program. A boy who was demoted from the 8th to the 7th grade this year told me he had gone from an "F" to a "D" since we started." Robert W. McDill, Soda Springs, ID.

13. "Our Chapters have consisted of students in our gifted program. Wish we had time to do more. The children have thought it was fabulous! Loved the 'doing' things!" S. Rutland, Memphis, TN.

14. "Excellent attendance every session AFTER SCHOOL." Jenlane Gee, Modesta, CA.

15. "I don't actually have a Chapter since I teach grades 10-12. However, I do use the Young Astronaut material in my Basic Math II Class. Since this is a remedial class, much of the information and lesson plans are perfect for them. I especially use the activities on the back of the POSTER because there are three different MATH activities on each--and they are good!" Laura Reeves, Albuquerque, NM.

16. "The program has been a tremendous boost to the teaching of science and math. Our students, teachers and parents have united and the program is evolving to everyone's excitement and benefit." Mary Ashley Goodrich, Wellsbury, WV.

17. We have enjoyed working with the excellent materials and information which you have sent us. The students are excited and anxious to do the activities." David B. Hosie, Northport, NY.

18. "I heartily endorse the efforts of the Young Astronaut Council and the foresight of the sponsors... We anxiously look forward to a fun-filled and interesting second year in the program as we are scheduling such events as a paper airplane contest and model rocket competition along with at least two field trips to the European Space Center and the Paris Air Show. We have been involved in fund-raising and are preparing to purchase a computer for our sponsoring junior high school." Gerald Adams, Ramstein, West Germany.

19. "It has united our multi-cultural school with a common interest and has sparked excitement." Kathy Price, Bloomfield, NM.

20. "The Young Astronaut program has been very important for our school as a whole, especially for the intermediate grades. Over the last three years, many students have become interested in science, and in turn became more enthusiastic towards school. The materials sent each month are well received and put to good use. At least one science unit a month is based on materials sent to us from the Young Astronaut Council. I use the posters to initiate creative writing assignments. The Newsletter is incorporated into my Reading and Social Science Programs. Without these materials my academic programs would not be as exciting for the children. I would gladly pay double for the materials, they are well worth the cost." Joseph G. Welch, National City, CA.

21. "We were the first Young Astronaut Chapter in Mercer County. Now we have four more Chapters in progress. Thank you for continuing the fine program of the Young Astronauts. Our boys and girls are benefiting from it." Linda Poff/Helena Corvin, Princeton, WV.

22. "The program has been very important. It has increased scientific interest in all members of the Chapter. The most valuable aspects are the various materials and their systemic arrangement. The approach to science is made interesting and fun." Shaareen Vakil, Bombay, India.

23. "I am impressed with the consistent high quality of the curriculum materials and program ideas provided by the Young Astronaut Council and am delighted in the high levels of student interest and enthusiasm about space-related information that I see... You folks are doing a super-fine job. Keep up the good work!" George W. Hastings, Richmond, VA.

24. "I presented a two-hour cross-talk session, 'YAC Leaders' at the March 1987 National Congress on Aviation and Space Education. BRAVO AND HATS OFF to the YAC!! I'M PROUD TO BE PART OF THIS NATIONAL ORGANIZATION!" Bonnie Gardner Mitchell, Danville, IN.

25. "I can't say enough good things about the Young Astronaut Program---in fact, I don't think I can begin to describe to you the impact our Young Astronaut Chapter has had on the Young Astronauts, on me, on our entire school community. Our Chapter has 25 2nd and 3rd graders--we meet weekly, for an hour after school. I think the major accomplishment has been that the kids are just as excited--maybe more excited!--about the program today as they were when they joined last September. They NEVER miss a meeting and they are already begging me to have the club for 4th grade next year. The wealth and variety of materials you send me are invaluable--I couldn't manage without them. Just now the entire school--in fact, our entire community--is living, breathing, thinking SPACE...When we say the pledge.."to learn about space and to help others towards these goals."...we KNOW that we are doing that in a most exhilarating way. Our kids are American, British, Lebanese, Indian--and the Young Astronauts reflect our multi-nationality. I hope that the Young Astronaut Program will continue just as it is--dynamic, exciting, worthwhile--as it impels our kids to wonder, question, experiment, dream, imagine." Mary Fry, Ras Tanura, Saudi Arabia.

YOUNG ASTRONAUT PROGRAM

STRATEGIES FOR ESTABLISHING A SCHOOL DISTRICT-WIDE PROGRAM

DR. SHIRLEY A. JACKSON
DIRECTOR OF EDUCATION

The Young Astronaut Program is designed for local control and autonomy. The Young Astronaut Council, the governing nonprofit organization, believes that, whenever possible, program implementation decisions and services should occur at the local level, as close to the classroom teacher as possible. This philosophy facilitates and maximizes local input in the shaping of a viable program for the children of the school district. It also ensures local school district ownership, provides ease of access to local support services within a supportive environment for Chapter Leaders, and ensures effective implementation and institutionalization of the Program within the school district.

For the reasons stated, the Young Astronaut Council is involved in systematically stimulating the formation of school district-wide Young Astronaut Programs. The Essential Elements for District-wide Programs and Strategies for Implementing Essential Elements follow:

ESSENTIAL ELEMENTS FOR DISTRICT-WIDE PROGRAMS

1. Educational leadership and support from the Superintendent, School Board, and professional leaders
2. Selection of a District Coordinator to oversee the implementation and administration of the program
3. Establishment of an Advisory Group for the Young Astronaut Program
4. Establishment of community/local based financial and technical support for the program
5. Selection of Chapter Leader/Teachers within schools
6. A District-wide inauguration of the Young Astronaut Program
7. Orientation workshop for Chapter Leader/Teachers
8. Monitoring of the operation of the program and support for Chapter Leader/Teachers
9. Evaluation of program implementation and operation
10. Recognition of achievement of Young Astronauts, Chapter Leaders/Teachers, and Chapter accomplishments

STRATEGIES FOR IMPLEMENTING ESSENTIAL ELEMENTS

1. LEADERSHIP:

The Superintendent's visible support is essential to a District-wide Program. Recommended actions include:

- o Presentation of the Program to School Board and significant others, ensuring their support
- o Awareness letters to all Principals and relevant Central Office staff
- o Selection of the District's Local Coordinator
- o Establishment of an Advisory Planning Group to work with the Local Coordinator

2. LOCAL COORDINATOR:

A Local Coordinator is named to provide leadership and to administer the Program. This person is usually the Director of Science, Mathematics, or Curriculum for the school district, although the choice varies among districts. The Local Coordinator is responsible for getting necessary support and resources, organizing, planning, identifying and implementing the procedures for selecting the district's Chapters and Chapter Leaders, start-up, monitoring of implementation, designing an evaluation for the local program, institutionalizing/providing for an orderly continuation of the Program, and being the district's liaison/conduit to the Young Astronaut Council.

3. ADVISORY/PLANNING GROUP:

An Advisory/Planning Group is formed and meets to delineate the school district's programmatic and operational plans. Representatives from the following ranks should be considered for inclusion: key administrators (principals of schools with YAC Chapters and others), district science, mathematics, technology supervisors and resource/lead/master teachers, YAC Chapter Leaders, teacher's union members, PTA/parents groups, and potential providers of resources/support services from the public and private sectors, such as organizations, businesses, volunteer groups, museum education directors, NASA Center education staff, local colleges/universities, State Department of Education Directors of Science, Mathematics and/or Curriculum, public library directors, etc.

4. LOCAL COMMUNITY BASED FUNDING RESOURCES:

- o Sources of funding are identified and funds secured to support the planned number of Young Astronaut Chapters. Local businesses and community organizations have been exceptionally generous in providing school districts with funds and services needed to conduct Young Astronaut Programs - you generally

only have to explain the Program and specifically what you want them to do. Including potential supporters on the Advisory/Planning Group is also an effective way of insuring their participation in the Program. Local businesses/ industry, high-tech companies, the Air Force Association, Federal Aviation Administration, Civil Air Patrol, and Defense Contractors may represent new sources of funding and partnerships. PTAs, Kiwanis Clubs, fraternities, sororities, etc. have also been excellent sources of funding for Chapters.

- o The Young Astronaut Program is an eligible activity for State and Federal funds, such as Title II, Chapter II, ESAA, and Chapter I. (Of course the applicable regulations must be adhered to). Some Boards of Education have allotted Board funds to support the Program.

- o Whatever the source of funding, a three year commitment should be sought to promote Program continuity and increase the academic effect factor for students involved in the Program.

5. RECRUITMENT OF SCHOOLS AND CHAPTER LEADERS:

- o Young Astronaut Program Schools and Chapter Leaders are identified. School administrators and Chapter Leaders should be volunteers if the Program is to be successful. Consider that when at least two (2) Chapters are formed in a school, Chapter Leaders tend to be mutually supportive - team teaching, sharing ideas, plans, materials, etc. This appears to enhance Chapter enthusiasm and implementation of the Program.

- o A letter from the Superintendent of Schools is sent to all of the principals in the district, giving them information about the Program, inviting/encouraging their participation, providing applications with instructions/submission deadlines, and identifying the Local Coordinator who should be contacted if additional assistance is needed. The Local Coordinator should follow-up with schools not submitting by the deadline to find out if they intend to participate, resolve any issues, and answer any questions. Local Coordinators should monitor the process to make sure that applications and checks have been submitted to the Young Astronaut Council, and that materials have been received by the schools.

- o Problems with receipt of materials should be addressed to the Director of Membership Services (202) 682-1985.

6. IMPLEMENTATION:

- o A high visibility, festive, kick-off meeting is planned/held to celebrate the beginning of the Program and to present the school district's program plan to the district's key administrators, public officials, sponsors, business and community leaders, volunteers, media, parents, principals, and Chapter Leaders in identified Young Astronaut Schools.

- School districts should take this opportunity to build community support. Local radio, newspaper and telegram reporters covering education should be invited to the celebration and encouraged to provide positive media coverage.

- The Young Astronaut Council has a videotape that is appropriate for such celebrations. Should you desire a copy of "The New Decade of Discovery" videotape, send a blank tape with your request to the Council.

7. ORIENTATION:

- An Orientation Meeting for all Chapter Leaders is planned and conducted, under the leadership of the Local Coordinator, by the Advisory/Planning Group.

- Topics of the meeting should include: The Chapter Leader's Handbook - contents and uses, the schedule of products and topics for the year overview chart, how the products and topics relate to the district's curriculum and textbooks, resources available to Chapter Leaders (volunteers, funds for field trips, NASA Centers, speakers, etc.), presentations and demonstrations, hands-on sessions using the materials, planning for the use of the Program in their schools by small groups of Chapter Leaders, resolving of questions and concerns that Chapter Leaders may have.

8. MONITORING AND SUPPORT:

- The Local Coordinator, with the assistance of the principals, monitors the start-up of Chapter activities, working with Chapter Leaders to resolve problems impeding successful Chapter start-up and operation.

- The Local Coordinator monitors the Program's implementation to provide mid-course corrections, technical assistance, in-service training, sharing meetings, etc.

- The Local Coordinator continuously assists schools in the district that might wish to expand their Programs or start Programs in their schools.

- The Local Coordinator continuously is alert to opportunities to provide support to Chapter Leaders, such as discretionary funds for purchasing science materials, free and inexpensive materials, volunteers who may assist Chapter Leaders in their preparation and presentation of the activities and on field-trips, sponsors for new Chapters, etc.

- Chapter renewal and continuation activities should be planned and implemented in a manner that provides Chapter Leaders with materials at the beginning of the school year. Replacements for Chapter Leaders not continuing in the Program should be quickly made, with arrangements for orientation for the new persons.

CHECKLIST

STRATEGIES FOR ESTABLISHING A SCHOOL DISTRICT-WIDE YOUNG ASTRONAUT PROGRAM

ACTION/ITEM	DATE PLANNED	DATE COMPLETED
1. Get commitment of Superintendent and top level officials		
2. Identify Local Coordinator		
3. Form Advisory/Planning Group Conduct planning meeting(s)		
4. Identify sources of funds Secure funds for Chapters		
5. Identify schools and Chapter Leaders		
6. Plan Kick-Off Celebration Conduct event		
7. Plan Chapter Leaders Orientation Meeting Conduct meeting		
8. Monitor Chapters start-up and program operations		
9. Design evaluation plan and implement evaluation		
10. Recognize and reward outstanding performance		

9. EVALUATION:

Local Coordinators should provide for Program evaluation. They are asked to cooperate with the Young Astronaut Council in its national evaluation efforts.

10. RECOGNITION AND AWARDS:

Recognition and rewards for outstanding schools, principals, Chapter Leaders, students, volunteers, sponsors, etc. should be sought from private sector businesses and organizations.

The Young Astronaut Council will award certificates to school districts successful in organizing and implementing district-wide Young Astronaut Programs.

Enclosed you will find the items checked:

____ 1. ____ Young Astronaut Program Curriculum Planning Chart(s).

____ 2. ____ Young Astronaut Program brochure(s) with the Chapter Registration Form. You may duplicate as many copies of the Form as you need.

____ 3. ____ Young Astronaut Program Information Packet(s).

____ 4. ____ Young Astronaut Program Introduction Transparency Masters.

____ 5. ____ Young Astronaut Early Childhood Education brochure(s).

Should you need additional information, please contact Dr. Shirley A. Jackson, Director of Education, (202) 682-1985.

YOUNG ASTRONAUT COUNCIL
EDUCATION AND TECHNOLOGY ADVISORY BOARD
ASSOCIATIONS/ORGANIZATIONS

American Association of
School Administrators
1801 North Moore Street
Arlington, VA 22209

American Federation of Teachers
555 New Jersey Avenue, NW
Washington, DC 20001

Association for Educational
Communication and Technology
1126 16th Street, NW
Washington, DC 20036

Association for Supervision
and Curriculum Development
225 North Washington Street
Alexandria, VA 22314

Association of Science and
Technology Centers
1413 K Street, NW
Washington, DC 20005

Council of Chief State
School Officers
379 Hall of the States
400 North Capital Street, NW
Washington, DC 20001

Council of Greater
City Schools
1413 K Street, NW
Fourth Floor
Washington, DC 20005

National Aeronautics and
Space Administration
400 Maryland Avenue, SW
Washington, DC 20546

National Association of
Elementary School Principals
1920 Association Drive
Reston, VA 22091

National Association of
Secondary School Principals
1904 Association Drive
Reston, VA 22091

National Association of
State Boards of Education
701 North Fairfax Street
Suite 340
Alexandria, Va 22314

National Catholic Educators
Association
1077 30th Street, NW
Washington, DC 20007

National Council of
Parents and Teachers
1201 16th Street, NW
Washington, DC 20036

National Council of Teachers
of Mathematics
1906 Association Drive
Reston, VA 22091

National Education Association
1201 16th Street, NW
Washington, DC 20036

National Institute of
Education/USDE
1200 19th Street, NW
Stop 1641
Washington, DC 20208

National School Boards
Association
1680 Duke Street
Alexandria, VA 22314

National Science Foundation
1800 G Street, NW
Room 527
Washington, DC 20553

National Science Teachers
Association
1742 Connecticut Avenue, NW
Washington, DC 20009

JETS, INC.
National Society for Professional Engineers
1420 King Street
Alexandria, VA 22314

Young Astronaut Council
1211 Connecticut Ave., NW
Suite 800
Washington, DC 20036

YOUNG ASTRONAUTS™

UNITED STATES of AMÉRICA

1987-1988 School Year

"Astronomy"

Dear Chapter Leader:

The chart on the reverse side of this page is designed to help you with your lesson planning during the year by providing you an outline of the types of products you will receive, the subjects they will cover and a schedule. By reading the descriptions and the specifics on the chart, you will be able to make optimum use of the Young Astronaut Program materials.

There will be some form of Young Astronaut Council communication with Chapters every month. In addition to the products and topics listed, information about special programs and activities will be sent as appropriate.

Best wishes for a great Young Astronaut year.

The Young Astronaut™ Program

School Y

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YOUNG ASTRONAUTS™

YOUNG ASTRONAUT PROGRAM
CURRICULUM PLANNING CHART
PRODUCTS & TOPICS

PRODUCT	NAMING THE NEW SHUTTLE	BLAST-OFF	GALAXIES!	LOOKING FOR LIFE	STA
	SEPTEMBER	OCTOBER (1)	NOVEMBER	DECEMBER (2)	JA
Adventure Series Toys That Teach Physics of Fun Recycled Science		• Water Rockets • Jumping Up action reaction, diving gymnastics • Balloon & Baggie Rockets	• Galaxy Flyers Frisbee dynamics • Earth's Place in Milky Way • Big Bang Balloon • Telescopes & Water Lenses	• Life Zones Temp., Earthlike Planets • Aliens • Clay Aliens different environments	• Prism Rainbo • Star T Colors • Star (tions, 3 birth o Supern
Space Watch		Astronaut Star Tracking	Andromeda Galaxy & Milky Way	Finding Our Stellar Neighbors	Stars in
Curriculum Posters	A Universe of Names Poster #0031	Mural: Space History Poster #0032		Great Galaxy in Andromeda Poster #0033	
Curriculum Activity Packages	What's In A Name?		Living Among the Stars: The Space Station		
Newsletter /Magazine			No. 1		No. 2
Competitions /Contests		#1 Astrophotography Essay		(#1 Entries due by Dec. 15, 1987)	
Astronet™ Space Update	Shuttle Update	Spacecraft	Galaxies Galore/ Hubble Space Telescope	Life in Space?/ AXAF Status	Notable Progran
Space Camp Alpha (Serial Story)	Space Camp Alpha	Space Camp Alpha	Space Camp Alpha	Space Camp Alpha	Space
Curriculum Update (Astro-Teaching Tips)	Introduction Astro-Teaching Tips	Spacecraft History	The Milky Way	Aliens	The Sta
Astrobits (Chapter Chatter)	September Update	October Update	November Update	December Update	January

*1 - **SEPTEMBER** - Receipt of Oct., Nov., Dec. Curriculum Package 2 - **DECEMBER** - Receipt of*

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)WER	THE SUN	PLANET PROPERTIES	COMPARING PLANETS	SPACESHIP EARTH	WATERY EARTH
ARY	FEBRUARY	MARCH (3)	APRIL	MAY	SUMMER
Films & .. & Crea- dels of &	• Solar Powered Toys • Pinhole Solar Observatory • Solar Energy Collecting	• Balancing Planet Mobile • Planet Distances scale models • 3D Planet Models scale models	• Robot Planet Explorers • Interplanetary Weather • Cratering eruptions, volcanic geology	• Satellite Jigsaw puzzle of Earth • Dynamics of Earth/ Moon system • Space Suits	• Aquanauts motion in water (water training) • Watery worlds value & search for water • Terrarium/Aquarium, closed ecosystems
r	Sun Path Ethno-Zodiac Astronomy	Planet Paths	Wander Stars Ethno-Astronomy Myths	Moon Watching	Astrophotography
		The Solar System Poster #0034			
	Brightly Shining Among the Stars				
		No. 3		No. 4	No. 5
	#2 The Solar System Mobiles & 3D Scale Models of Planets		(#2 Entries due by April 1, 1988)		
s/SETI	Solar Power/SMM Program/ Polar Data	Planet Mapping/ Phobos and Mars Orbiter	Robot Planet explorers/SPOT & other remote sensing programs	Tides & Return to the Moon	
) Alpha	Space Camp Alpha	Space Camp Alpha	Space Camp Alpha	Space Camp Alpha	
	The Sun	Exploring Planets	Interplanetary Weather	The Moon	
date	February Update	March Update	April Update	May Update	June Update

Feb., Mar. Curriculum Package *3 - MARCH - Receipt of Apr., May, June Curriculum Package*

Description of Products:

ADVENTURE SERIES:

TOYS THAT TEACH shows how the action of familiar toys can lead to scientific investigations on Earth and in space. PHYSICS OF FUN uses children's experiences at amusement parks, playgrounds and sports events to introduce physical science concepts. RECYCLED SCIENCE draws on common household items as resources for science experiments.

SPACEWATCH:

SPACEWATCH uses the night sky as a celestial blackboard for in-class and take-home astronomy and computer science activities.

CURRICULUM POSTERS:

Full-color, high motivation pictures depict space events with curriculum materials in science, mathematics, technology and interdisciplinary fields for each grade level.

CURRICULUM ACTIVITY PACKAGES:

These packages are usually hands-on manipulatives or extended print materials designed for group projects and require longer-term involvement than do poster activities.

NEWSLETTERS/MAGAZINES:

Newsletters/Magazines will contain information about special Chapter activities throughout the country as well as puzzles, computer activities, articles on space, general news and other materials for Young Astronauts.

COMPETITION/CONTESTS:

COMPETITIONS highlight achievement directly related to science, mathematics, and Technology while CONTESTS emphasize creativity in other areas, such as language arts.

ASTRONET™:

A private telecommunications system providing astronomy and space program updates and other materials is available to all Chapters. The serialized Space Camp Alpha story, Chapter news and supplementary curriculum materials will be updated monthly. Access requires a computer with modem hook-up.

Your suggestions are always welcome. Please write us at:

Young Astronaut Council
P.O. Box 65432
Washington, D.C. 20036

Adventure Series

PHYSICS OF FUN

YOUNG ASTRONAUT PROGRAM

VOL.1, NO.7

United States of America

TEACHER INFORMATION

LEARNING GOALS:
These activities focus on the science of playing baseball.

- *Trainees* will determine where to hit a baseball with a bat. They will also experiment with aiming the ball when hitting it.
- *Pilots* will figure out how high a baseball travels by timing its flight.
- *Commanders* will calculate the velocity of a baseball and a baseball player. They will learn to estimate distances and to use these distances to estimate speeds.

GUIDING THE ACTIVITIES:
These activities overlap in Young Astronaut abilities. After reading all the activities, you might decide to try some version of all three activities with your group. A field trip to a baseball game can be a group activity to complement this Adventure Series. The HOW HIGH, HOW FAR AND HOW FAST activities can be used at a real ball game.

BATTER UP: Young Astronauts can divide into groups to try this experiment. Each group will need a ruler, a baseball, and two pieces of tape. Instruct groups to mark the place where the ruler hits the baseball with one piece of tape. The second piece of tape should mark the place where the baseball stops. The groups can use their rulers to measure the distances.

Watch as groups complete the activities. They should observe that the ball goes farther when it is hit with the end of the ruler. The ruler's end is traveling faster than any other part of the ruler. Since it is traveling faster, it can give more momentum to the ball. If your Young Astronauts get different results, they are unconsciously swinging harder when they hit the ball with the close part of the ruler.

Read over the second part of the activity with your groups. Provide enough room on the floor for the swinging motions. Both drawings show students hitting the ball with their left hands. This seems to be a natural motion that does not result in the ball traveling so far. To minimize confusion, insist that students do the experiment as it is drawn and to sketch in the path of the ball. They will discover that when they swing early, the ball moves to the left. When they swing late, the ball moves to the right. Ask if any of the Young Astronauts play baseball. Have a right-handed baseball player swing an imaginary bat for the group. Decide which way the ball will move if he swings early or late. Then demonstrate the swing of a left-hander. Have the students decide if swinging early or late has the same effect. They will discover that it has the opposite effect for a lefty.

HOW HIGH: Young Astronauts will need stopwatches and baseballs for this experiment. Students can work in groups of two or more. One student throws the ball straight up, while the other times how long it takes for the ball to return. The graph on the activity page shows how high the ball went. Review graph-reading skills if necessary at this point in the activity. Compare results to see who can throw a baseball the highest. If your Chapter decides to attend a baseball game, students can time pop flies to see how high they go. If students go on their own, they can make a report to the group.

HOW FAR AND HOW FAST: This activity requires a baseball game and a stopwatch. A televised game can be used. Students first get practice in calculating speed as a function of distance and time. Since students tend to think of speeds in English units, the activity has been set up to produce velocities in feet/sec. or miles/hour. You may convert your findings to metric if you wish.

The speeds of line drives and fast balls usually surprise students. To get very accurate results, they will need to read results in tenths of a second if this is possible. They will also have more difficulty in estimating distances from television. Suggest that they use cues like the distance to the back fence. This information is often painted on the fence. For those attending a live game, this information may be in the program.

As an advanced activity, students can also see if the hits from fast balls travel farther. Foul balls can also be used for this activity. As an extension of this activity, you might get a high school or college baseball coach to visit the group and talk about baseball pitching and batting techniques. There are interesting physics lessons involved in how the different pitches are thrown.

PHYSICS OF FUN

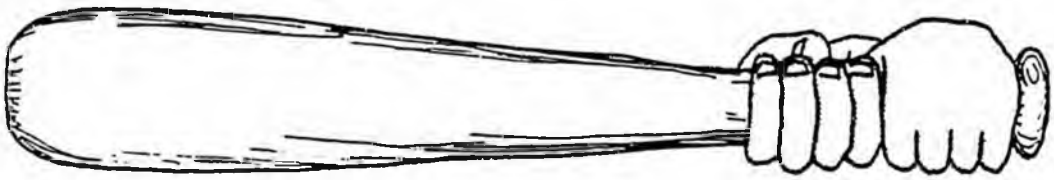
BATTER UP

The batter hits the baseball. Where on the bat should the ball hit for the longest hit? Try this experiment to find out. Place a baseball on the floor. Swing at it with a ruler. Try to keep your swings constant. Hit the baseball with the ruler's end. Mark how far the ball rolls.

Hit the baseball in the middle of the ruler. Mark how far the ball rolls.

Hit the baseball with the part of the ruler next to your hand. Mark how far the ball rolls.

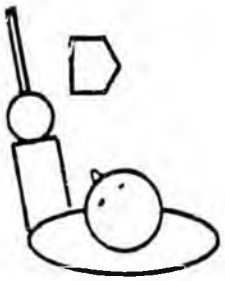
Put an "X" on the place where the batter below should hit the ball with his bat.



Have a friend roll the baseball slowly toward you. Swing early so that you hit it before it reaches the plate. Draw how it moves on the sketch below.

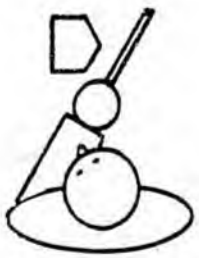
Have your friend roll the ball again. This time swing late so that you hit the ball after it reaches the plate. Draw how this ball moves on the sketch below.

PITCHER



BATTER

PITCHER



BATTER

Explain how hitters aim the balls that they hit.

TOYS THAT TEACH

Adventure Series

YOUNG ASTRONAUT™ PROGRAM

VOL. 1, NO. 7

United States of America

TEACHER INFORMATION

LEARNING GOALS:

The paddleball was one of the first ten toys taken into space. Its behavior was interesting and predictable.

- *Trainees* will investigate which direction is best for paddleball hitting and will also explain why.
- *Pilots* and *Commanders* will make a g-detector out of a paddleball. They will also learn what the term "1 g" means.
- *Commanders* will carry the finished paddleball g-detectors on elevators, in cars, and to playgrounds in search of different g-force sensations.

GUIDING THE ACTIVITIES:

There are two different kinds of activities in this series. The trainee activity uses the paddleball as a toy. It can be done as a group at any level. If possible, obtain the "The Toys in Space" videotape and play the footage on the paddleball at the conclusion of the activity. The videotape is available through your nearest NASA regional service center. See your Chapter Leader's Handbook to find your regional center. The other two activities convert the paddleball into a force detector. *Pilots* and *Commanders* must do the paddleball g-detector activity. Both *Pilots* and *Commanders* can then use the final activity to measure forces in the environment.

PADDLING THE BALL: This activity gives Young Astronauts experience in collecting and displaying data. Younger students will also gain experience counting. The students will also see that data do not always agree. Some students may paddle better upward, and others may paddle better downward. In general, most students get more bounces when paddling downward because gravity slows the ball down as it reaches the paddle. The ball is then easier to hit. Also when paddling sideways, gravity pulls the ball down and below the paddle. A ball bounced downward will usually return to the vicinity of the paddle.

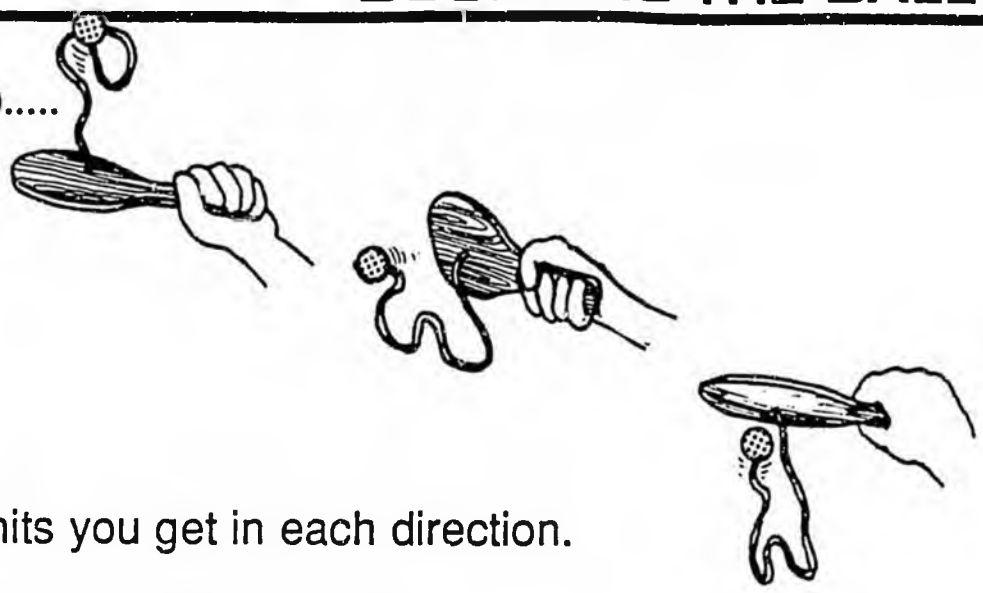
PADDLEBALL g-DETECTOR: This is, perhaps, the easiest and safest force detector that students can build. First they glue the pattern on a paddleball. Then they suspend the ball in front of the paddle by attaching the string to the paddle's top. The string should be just long enough to have the ball hang freely at the "1 g" reading. This paddleball g-detector can be calibrated because most paddleball balls have about the same mass. When purchasing paddleballs for this activity, be certain to get balls that are not too light. After the detectors are completed, discuss what g's are. Astronauts use the term to describe the sensations of space flight. One g is the force you feel as you sit or stand on the earth's surface. If you travel upward quickly (like an astronaut at lift off), you may feel twice or three times as heavy as normal. This is called 2 or 3 g's. If you fall on a roller coaster or elevator, you feel lighter than normal. Then you are experiencing less than 1 g.

MEASURING g's: Once Young Astronauts have made their g-detectors, this can be a fun community activity to determine where people feel heavier and lighter than normal. The fast elevator in a sky skyscraper can be the source of changing forces. To verify their paddleball readings, Young Astronauts can also carry a bathroom scale on the elevator ride. The bathroom scale is more sensitive to small changes in force. Students can have a contest to see who can gain or lose the most weight. The paddleball g-detector or bathroom scale will read lower g's as the elevator stops or starts. Readings will be greater than normal when the elevator starts up or stops going down. In a car, force changes are even greater. A sudden bump can send a passenger off the seat. This is a moment of zero g or weightlessness. Passengers can feel themselves pushed into their seats in a steep valley or dip. In discussing the g's felt in cars, be sure to urge proper speeds and safety precautions. Playground forces depend on how fast the riders are going. Once again safety precautions must be stressed. Students must always hold on with both hands on the swing, merry-go-round, and see-saw. They can tie their g-detectors in place before the ride begins. The swing and see-saw can produce weightless sensations as riders reach the highest point and fall downward again. The merry-go-round spinning rapidly can give almost one g of sideways force. In talking about the g's felt, remind students that the Shuttle astronauts never feel more than 3 g's -- even at lift off. For safety's sake, students should also avoid experiences that pull over 3 g's.

TOYS THAT TEACH

BOUNCING THE BALL

Paddle a paddleball up.....
sideways.....
and then down.



Count the number of hits you get in each direction.
Record the numbers.
Watch five of your friends paddle the ball.
Record their names and scores.

Paddler	Paddle Up	Paddle Down	Paddle Sideways
Me			

Which direction is the easiest?

Which direction is the hardest?

Can you explain why?

TOYS THAT TEACH

Adventure Series

YOUNG ASTRONAUT PROGRAM

PADDLEBALL G-DETECTOR

United States of America

A paddleball can be used to measure the forces you feel. Cut out the paddleball pattern and glue it to the side of the paddle where the ball is not attached. Push a tack into the top of the paddle. Hang the ball from the tack by attaching the string to the tack. Fix the string's length so that the ball hangs just in front of the 1g circle. Your g-detector is now complete.

Hold it in front of you. As you stand still on the earth's surface, you feel a 1g force. That is what your paddleball reads.

Can you think of places where your paddleball force detector would not read 1g?

TOYS THAT TEACH

MEASURING G'S

nce you have made a g-detector, you can measure the forces you feel. If you feel a force at is twice as strong as the earth's pull on you, your g-detector will register 2g's. If you el no forces for a moment, then you are feeling 0g, or weightless. See what happens to ur g's in these places:

ON ELEVATORS:
Use your g-detector to show the changing forces in an elevator. Pick the tallest and fastest elevator you can find. Describe the results in the table below:

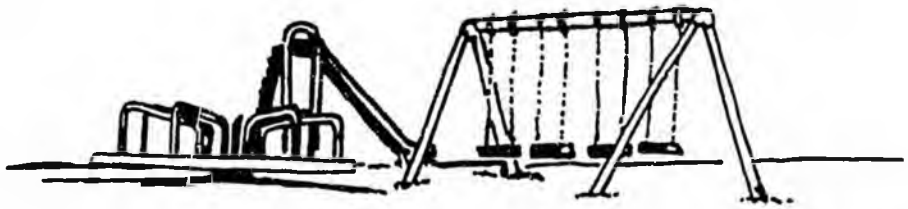
LOCATION	g's MEASURED	SENSATION
As elevator starts up		
As elevator stops going up		
As elevator starts down		
As elevator stops going down		

IN CARS:

Carry your g-detector in a car. Bumpy roads with hills work best. Be sure that your driver is careful. What happens as you go over a bump or hill? What happens as you go through a valley or dip?

AT PLAYGROUND:

Find out where you feel the strongest forces: on a swing, on a merry-go-round, on a see-saw, or on a slide.



PHYSICS OF FUN

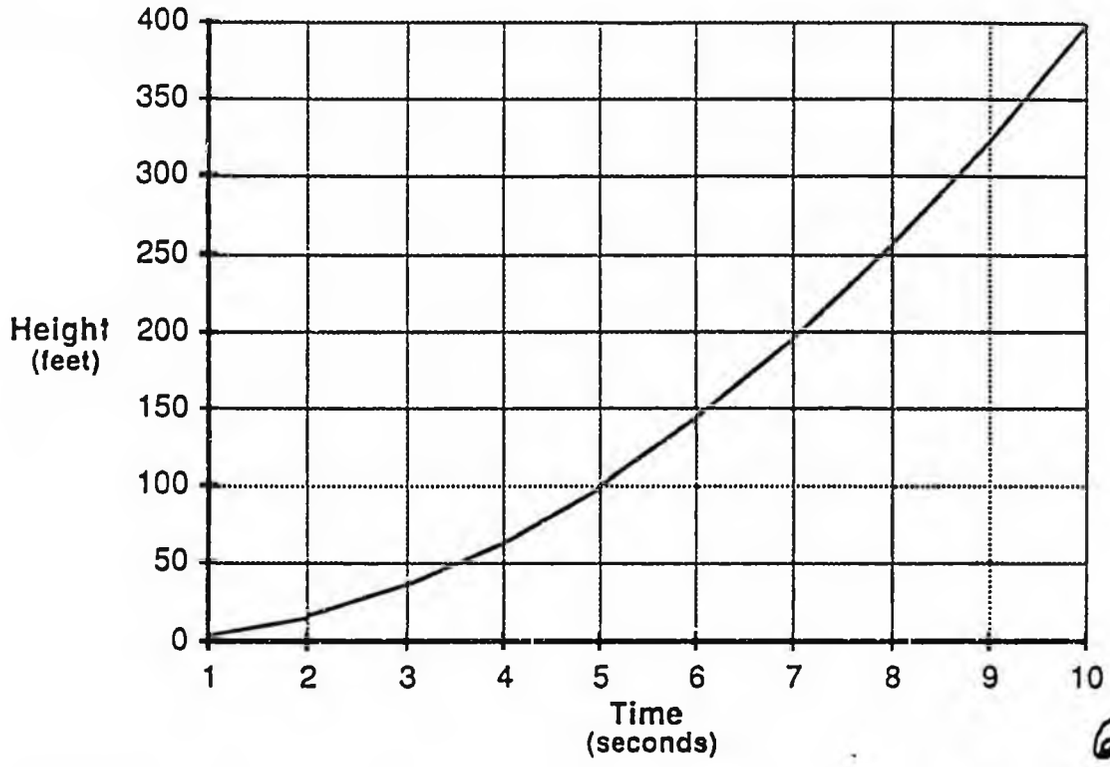
Adventure Series

YOUNG ASTRONAUT™ PROGRAM

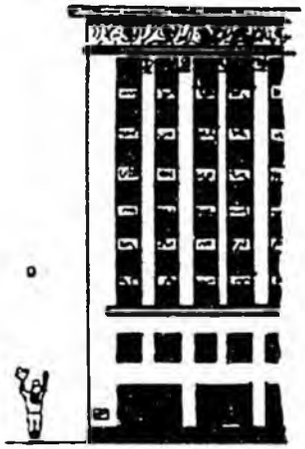
United States of America

HOW HIGH

For this experiment you will need a stopwatch and a baseball. Throw the ball straight up. Have a classmate time how long it takes for the ball to return to your hand. Read the graph below to find out how high your ball went.



Your highest toss is _____ feet.
Each story of a building is 12 feet high.
With your toss, you could put a baseball on top of a _____ story building.



Go to a baseball game. Time how long it takes for a pop fly to return to the ground. Figure out how high the pop fly traveled.

PHYSICS OF FUN

HOW FAR AND HOW FAST

A baseball diamond is 90 feet on a side.
Watch a baseball game in the stands or on television.
Time how long it takes for a runner to get to first base.
Record this time along with the player's position, i.e., pitcher, catcher, outfielder, infielder.
Divide 90 feet by this time. The result is the player's speed in feet per second. Multiply this number by .68. The product is the baseball player's speed in miles per hour. Convert your results to kilometers per hour. (mi/hr) X 1.6

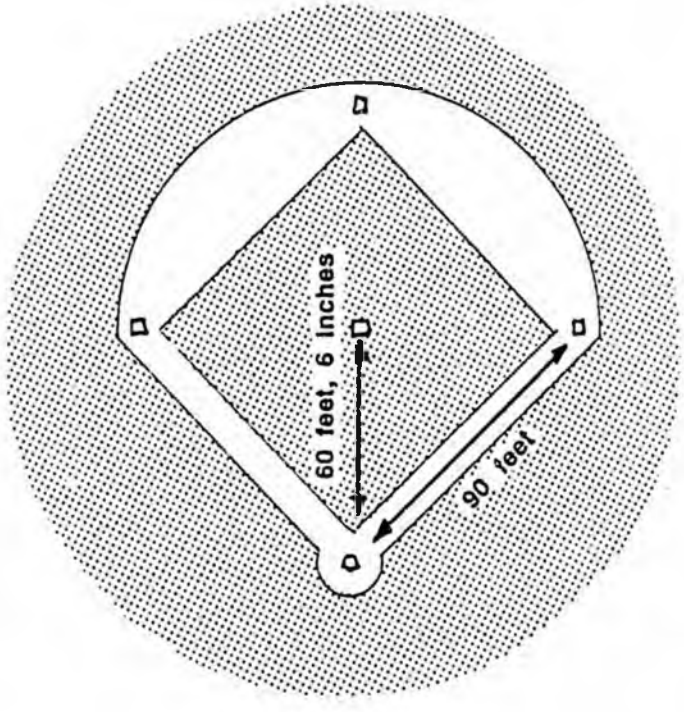
PLAYER'S POSITION	TIME (sec)	SPEED (ft/sec)	SPEED (mi/hr)

Which players are the fastest?
Is this logical? Why or why not?

Time a line drive from impact with the bat to being caught by a fielder. Estimate how far the ball traveled. Use the length of the base lines as a guide. Divide the distance by the time to find out how fast the ball traveled.

Time of line drive:
Approximate distance traveled:
Approximate speed:

The pitcher's mound is usually 60 feet 6 inches from the plate. Time how long it takes for a ball to leave the pitcher's hand and reach the plate. Divide this time into 60. The result is the ball's speed in feet per second. What is the fastest pitch you see in an inning? Convert this speed to miles per hour? Then kilometers per hours.



FASTEST SPEED	(ft/sec):	(mi/hr):

YOUNG ASTRONAUT™

The Official Newsletter of the Young Astronaut Council | Volume III, No. 4 | March/April 1987

Soviet Visitors Leave a Lasting Impression

The word "drug" became a common one during the 13 days the Soviet Young Cosmonaut delegation spent in the United States. It means friend in English and there were new friends to be made in Washington, Orlando, Huntsville, Houston and New York. In addition, there were old friends to renew relationships with along the way.

Ten Young Cosmonauts and five adults, including the Soviet Cosmonaut who holds the record for time spent in space, arrived at Dulles International Airport on December 9. They were greeted by an enthusiastic crowd of more than 50 Young Astronauts from Hutchison Elementary School in Herndon, Virginia and other dignitaries including columnist Jack Anderson, the Chairman of the Young Astronaut Council, Wendell Butler, Executive Director of the Council, and Florida Congressman Bill Nelson, who flew aboard Space Mission Columbia 61-C in January 1986. Nelson entertained the Hutchison students with tales of space adventures while the Soviets were checked through Customs.

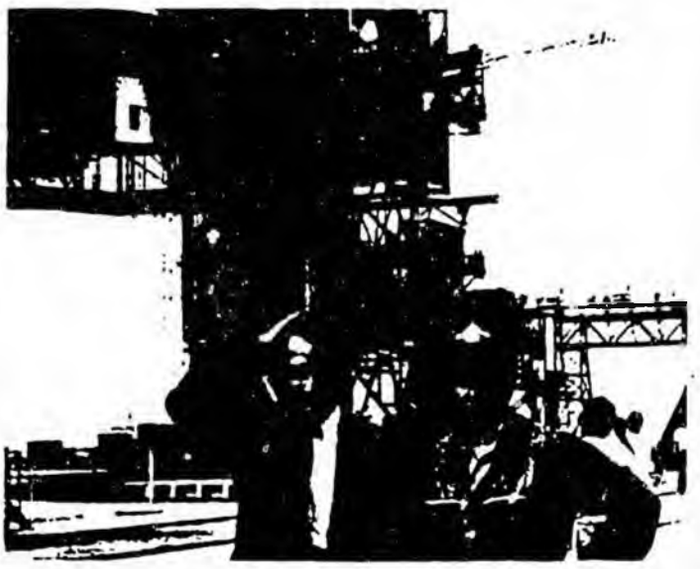
And then they arrived. Vladimir Shaplyko, the leader of the delegation and the Secretary of the Komsomol Central Committee, Vladimir Solovyov, the Soviet Cosmonaut who spent 362 days in space aboard two separate missions, Viktor Yevseyenkov, Chief of Section, Committee on Youth Organizations (CYO), Viktor Boychevskiy, CYO staff member, Elena Kolesnikova, a teacher at the Moscow Teachers Training College, and Young Cosmonauts Aleksey Alkhov, Michayl Baskov, Yuliya Grishina, Yuri Zolotov, Aleksander (Sasha) Konkov, Oleg Korotovskikh, Pavel Kudryavtsev, Tanya Nikitina, Igor Novikov, and Anton Perkusev. The Hutchison students waved their Soviet and American flags wildly and later gave each member of the delegation a gift of flowers. The Soviets in return shared souvenirs with the Hutchison Young Astronauts.

Anderson welcomed the Soviet delegation warmly and said, "I look forward to a great time together and in ten years we will be going to Mars together." Shaplyko thanked

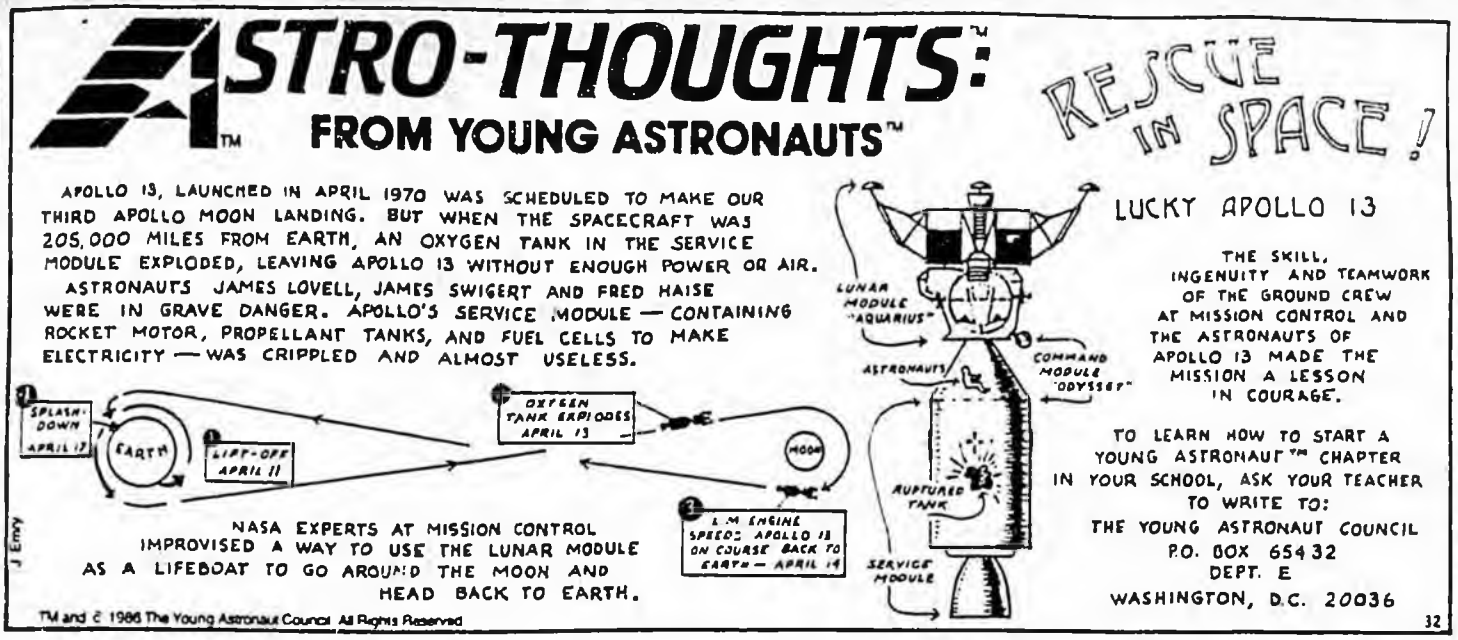
continued

SOVIETS STEP-OUT — Members of the Soviet delegation enjoy a jaunt to Disney World's Magic Kingdom and share a moment with Mickey Mouse and Pluto. They are from left to right: Young Cosmonauts Aleksey Alkhov, Michayl Baskov, Pavel Kudryavtsev, Igor Novikov, Yuliya Grishina, Oleg Korotovskikh, Tanya Nikitina and Elena Kolesnikova, a Soviet teacher and translator for the group.
Photo by Walt Disney Corporation

WELCOME — Young Astronauts from Hutchison Elementary School, in Herndon, Virginia, give the Soviet delegation a rousing welcome when they arrive at Dulles International Airport on the first leg of their 13 day tour.
Photo by Vicki Warren



LAUNCH PAD INSPECTION — Vladimir Shaplyko, leader of the Soviet delegation and Vladimir Solovyov, a Soviet Cosmonaut, take a close-up tour of a launch pad at the Kennedy Space Center, Cape Canaveral, Florida.



everyone for the warm reception and added, "When we go back home, we will tell our children everything we have seen."

Amy Grubb, of Clairton, Pennsylvania, one of the Young Astronauts who visited the Soviet Union in October, flew to Washington to greet the delegation and to see Tanya, Yuri and Sasha again. She grew friendly with the trio during the time she spent in the Soviet Union. Amy gave Solovyov an American and a Soviet flag.

After the reception, it was on to a visit at Hutchison Elementary School. The Soviet delegation hopped aboard a bus donated by Safeway Stores to ferry them about Washington. At Hutchison, the group had a chance to view the kind of projects American students are involved in at their schools. They also shared two six-foot long submarine sandwiches with the students, teachers and other guests.

Here is how one Hutchison student described the Soviet visit, "When I first heard about them coming, I had a picture of them in my head. The Cosmonauts looked nothing like I had expected. They looked just like us. I really enjoyed participating in it. I think Friendship Through Space is a very good thing to do. I think we should do more things with the Young Cosmonauts and Cosmonauts."

The next two days spent in Washington were action-packed. From the National Air and Space Museum where the delegation got a chance to examine U.S. space artifacts and view the film "The Dream is Alive" on a giant screen, to Arlington Cemetery where the group laid a wreath at the Tomb of the Unknown Soldier, there was plenty to see and do. The delegation was also invited to a private session at NASA headquarters with James Fletcher, the current head of the space agency. Fletcher was the head of NASA during the days of Apollo-Soyuz, the joint American-Soviet mission. At NASA, the delegation was given a variety of space gifts, including an autographed picture of Astronaut Frederick H. Hauck, who showed slides of his mission into space.

Other highlights of the Washington part of the U.S. visit included the viewing of Star Trek IV, a reception at the Soviet Embassy, viewing the White House Christmas tree lighting, a visit to the graves of President John F. Kennedy and Astronaut Dick Scobee, lunch at McDonalds and a bus tour of Washington. One of the more poignant moments occurred during a lunch at Joe and Mo's Restaurant. According to Tanya, one of the most important holidays in the Soviet Union is a person's birthday. Appropriately, her sixteenth birthday fell on the group's third day in Washington and everyone shared a grand celebration provided by Joe and Mo's, a popular Washington restaurant. Liza Mallott, a staff member at the United States Information Agency, baked a special cake decorated with flags of the Soviet Union and the United States. The Council presented Tanya with a Young Astronaut cabbage patch doll. Those at the lunch were also treated to a musical

continued

FIRST HAND LOOK — Members of the Soviet delegation get a close-up view of space equipment at the Marshall Space Flight Center in Huntsville, Alabama.

REAL TASTE OF AMERICA — Tanya enjoys a lunch break at McDonalds restaurant during the Soviet delegation's visit. The McDonalds Corporation treated the delegation and visiting dignitaries to some "real American food."

rendition of "Happy Birthday" by the Joe and Mo waiters, and Lolita Hickman, Deputy Director of the Council, sang "O Holy Night." Also invited were representatives of the Future Farmers of America who concluded that the Soviet Young Cosmonauts "were just regular kids." It was a special occasion in every way.

The group hardly had time to settle into their lovely accommodations provided by the Mayflower Hotel before they were off to Orlando, Florida. Thanks to the Department of Transportation, a special plane was made available to the group for the entire trip. American Airlines was generous enough to provide two stewardesses, Gale Sloan and Martha Flannagan.

rockets are on permanent display.

During a press conference held by NASA at Kennedy Space Center, Soviet Cosmonaut Solovyov told the group that during his most recent space trip to the Soviet Space Station Mir, he took a picture of the seven Challenger astronauts with him. "I wanted those seven brave astronauts to go to outer space," he said.

Soviet Young Cosmonaut Yuri Zolotov had this to say about Kennedy Space Center, "We have a saying in Russian, it's better to see something once, than to hear about the same thing seven times."

Later, back at the hotel the delegation was honored by Action Packets, a sponsor of the Young Astronaut Program.

SPACE UPDATE — Young Astronaut Antonio Smith, second from left, joins the Young Cosmonauts examining space equipment at Marshall Space Flight Center in Huntsville, Alabama.

ASTRONAUT HONORED — Yullya Grishina and Sasha Konkov honor Challenger Astronaut Dick Scobee by placing flowers on his grave at the Arlington Cemetery.

Photo by Katherine Lambert

Disney World in Orlando was a big hit with the Young Cosmonauts. They thoroughly enjoyed Epcot Center, the Magic Kingdom and the wonderful accommodations provided by Orlando Marriott World Center. They loved the glass outdoor elevators, indoor and outdoor swimming pools and jacuzzis. The Young Cosmonauts also tried their hand at video games for the first time and got "hooked."

The Florida trip included a stop at Kennedy Space Center, where the delegation had the unique opportunity to walk out onto a Shuttle Launch Pad, tour the Vehicle Assembly Building, a 52-story structure where Shuttles are readied for lift-off, visit the Apollo Moon Program Flight Simulator and stop at the Space Port Visitors Center, where a variety of

A press conference was held and the Young Cosmonauts were interviewed by local junior and high school journalists. Adult members of the press were also there, but it was the student journalists who impressed the Young Cosmonauts the most.

A barbecue was also held by Action Packets. Besides getting a taste of good old American food, the Soviets were treated to a square dance complete with straw hats and bandannas. After sharing the American dance tradition, the Soviets treated everyone to a display of Russian dancing.

The next two days were spent at Epcot Center and Disney's Magic Kingdom, both made more enjoyable because of the hospitality of the Walt Disney Corporation and the three escorts they made available. At Epcot Center, the group really enjoyed the spectacular battle between good and evil fought by planes, boats, hydroplanes, hand gliders and dragons. Good won and everyone cheered.

At Disney's Magic Kingdom, everyone enjoyed shaking hands with Mickey Mouse, Pluto and Donald Duck. The parade marking Disney's fifteenth anniversary was also a special hit.

The next stop on the delegation's whirlwind American tour was another Young Cosmonaut favorite — United States Space Camp in Huntsville, Alabama. Eastern Airlines was kind enough to offer all the Young Astronauts who visited the Soviet Union a flight to Huntsville, and Space Camp opened its doors to the entire group of Young Astronauts and Young Cosmonauts. Officials at Space Camp had the facility's technical manuals translated into Russian for the Young Cosmonauts and had interpreters on hand to aid the Cosmonauts while they were in training. The Young Cosmonauts and Young Astronauts participated in two simulated shuttle missions and later were given wings as part of their graduation.

Cont. on page 6

FLYING HIGH — Soviet Young cosmonaut Yuri Zolotov and American Young Astronaut Chip Yarborough get a chance to "fly" at U.S. Space Camp in Huntsville, Alabama.

Young Cosmonauts Come To Houston

By Dr. Carolyn Sumners
Director of Astronomy
Houston Museum of Natural Science

On December 17, the Soviet delegation of Young Cosmonauts landed in Houston. They were tired, but ready for the day of fast-paced activity that awaited them.

The first stop was a Safeway grocery store where the group got a chance to meet some local high school students who had been studying Russian. The students and the Young Cosmonauts had plenty to talk about. A tour of the grocery store and a lovely reception followed, and some of the Russians did seem a bit surprised by our food selection — especially the variety of fresh fruits and vegetables in the winter.

After a brief check-in at their hotel, the group arrived for the evening's festivities at the Houston Museum of Natural Science. The Mayors of both Houston and Friendswood proclaimed December 17 and 18 as "Young Cosmonauts' Days." A bilingual program entitled "Sharing the Space Adventure" was enjoyed by the Soviet delegation and the Houston Young Astronauts and their families. The audience was "carried" to Venus, Mars and the Moon. At each destination, the theme of Americans and Soviets exploring space together was reintroduced. The finale of the program was a picture of the Earth as seen from space and a restatement of the idea that we are all brothers sharing the Earth and sky.

The Young Cosmonauts then joined the Museum's Young Astronaut Commanders in a tour of the Observatory with its optics and computer labs. Along the way, they met a Russian-speaking robot, had their hair stand on end with a Vandergraff generator, learned how laser light shows are produced, and experimented with the Museum's microcomputers.

By this time, everyone was starved, and the group quickly joined all the other Young Astronauts around the Museum's big dinosaur. Twelve long library tables held over 120 different dishes prepared by the Museum's Young Astronaut Chapter members. They helped serve their dish to members of the Soviet delegation and other visiting dignitaries.

In the formal, after-dinner program, the Houston Young Astronauts presented a bilingual welcome with banners and signs. Captain Alan Bean, the fourth man to walk on the Moon, described what it was like to explore the lunar surface. Jim Oberg, an American expert on the Soviet Space Program, welcomed the delegation on behalf of space enthusiasts of all nations. Thanking them for their expressions of grief over the loss of the Challenger astronauts, June Scobee, wife of Challenger Commander Dick Scobee, spoke eloquently to the Soviet delegation. Soviet Cosmonaut Vladimir Solovyov ended the speeches with his own personal hope for cooperative space efforts between our two countries.

The evening's final event was a telecommunications conference on CompuServe. Callers from around the country were encouraged to ask questions using their computers. The questions were translated into Russian and then answered by the Young Cosmonauts. The discussion allowed many more Americans to participate in the visit by the Soviet delegation.

The next day, the Soviet delegation and five Young Astronaut Commanders from the Museum enjoyed a VIP tour of the Johnson Space Center. Eight astronauts accompanied the group and led them through a Space Station Mock-up and the Shuttle trainers. The Young Astronauts and Young Cosmonauts sat in the trainer cockpit, operated the remote manipulator arm from the flight deck trainer, and rode on the frictionless table where astronauts train to operate the Manned Maneuvering Unit. The delegation also visited Mission Control and was allowed to push buttons and turn dials. Everyone saw different kinds of moon rocks and how rockets were handled. Later, they were treated to a lunch in the Space Center Cafeteria by the American Institute for Aeronautics and Astronautics.

The visit ended with the Young Astronauts wishing the Young Cosmonauts a fond farewell at the airport. At the next Young Astronaut meeting, everyone shared memories and memorabilia from the delegation's stop. Many of the Young Astronauts had collected autographs, others had addresses of their favorite Young Cosmonaut so they could write letters and the Commanders had been given lapel pins and small gifts from their new Soviet friends. We are now researching whether CompuServe can send electronic mail to the Soviet Union so that we can send our new friends our thoughts and best wishes.

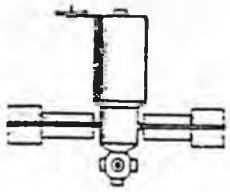
SPACE STATION — Young Cosmonauts and Young Astronauts get a close-up view of the Space Station's Operation Module at the Johnson Space Center in Houston.

Trainee Activity

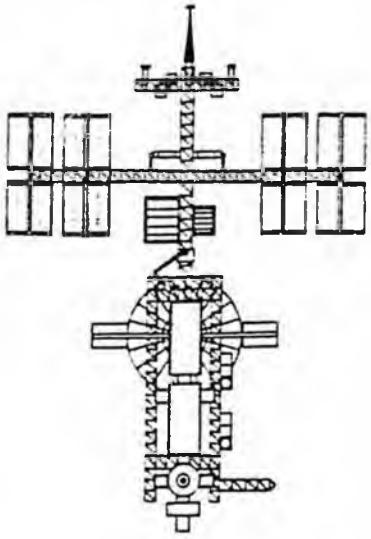
Space Stations of Today and Tomorrow

The Soviet Union launched its Mir Space Station in 1986. The United States plans to launch its Space Station in the mid 1990's. The Space Stations are similar in many ways — both have solar panels for power, docking places for transfer vehicles, and both have crew quarters and communication antennas. The United States Space Station design has been changed from the preliminary drawing on the right. On the Space Stations shown on the next page, color the solar panels blue, the docking ports green, the communication antennas red and the crew quarters yellow. Can you name the vehicles which carry astronauts and cosmonauts to these Space Stations?

SUPERMARKET WELCOME — Safeway Stores welcomed the Young Cosmonaut delegation to Houston with a reception inside one of their grocery stores. Members of the delegation enjoyed walking around and seeing what kinds of foods are available to Americans in their supermarkets.



U S S R Mir Space Station



U.S. Space Station

Pilot Activity

Name That Date

The Soviet and American space programs have moved ahead with a series of firsts. Name the years of the following special first space occasions.

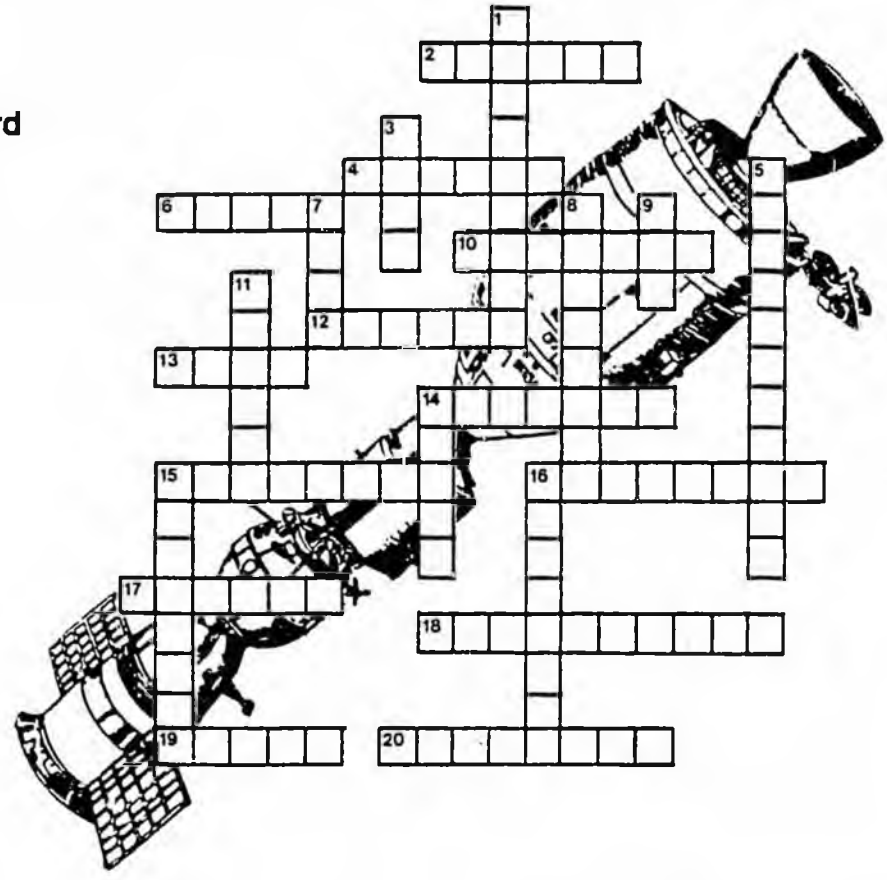
* Sputnik 1, the first artificial Earth satellite, is launched by the Soviet Union. First puppy orbits the Earth.
* America's first satellite is launched.
* Luna 2 crashes into the Moon's surface. Luna 3 makes the first photographs of the Moon's far side.
* Soviet Cosmonaut Yuri Gagarin becomes the first man in space. He is followed one month later by American Astronaut Alan Shepard in a suborbital flight.
* John Glenn is the first American Astronaut to orbit the Earth. Mariner 2 successfully completes flyby of Venus and sends back first useful information.
* America's first manned rendezvous in space aboard Gemini VI and Gemini VII.
* The Soviet Luna 9 craft makes the first soft landing on the Moon. Venera 3 crashes on Venus, the first man-made machine to land on another planet.
* Apollo 8 orbits the Moon with three astronauts
* Apollo 11 lands on the Moon. Neil Armstrong becomes the first human to set foot on another world.
* Luna 16 lands on the Moon and scoops up materials which it returns to Earth. Luna 17 discharges the robot Lunokhod 1, which explores the Moon.

Commander Activity

Soviet Space Program Crossword

Discover how much you know about the Soviet space program. Fill in the crossword puzzle below using these words:

Apollo	Plesetsk
Baikonur	Progress
Cosmonaut	Salyut
Gagarin	Solovyov
Kizim	Soyuz
Luna	Sputnik
Lunokhod	Star City
Mars	Tereshkova
Mir	Tsiolkovsky
Moscow	Vega
	Venera
	Venus



ACROSS

2. American craft that docked with a Soviet craft.
4. First man to walk in space.
6. One of the cosmonauts who first visited Mir.
10. First man in space.
12. First Soviet Space Station.
13. Soviet unmanned Moon craft.
14. First artificial satellite.
15. Place where cosmonauts train.
16. Soviet supply freighter.
17. Capital city of the Soviet Union.
18. First woman in space.
19. Planet that Soviet spacecraft visited first.
20. Unmanned Soviet lunar rover.

DOWN

1. Soviet Cosmonaut.
3. Soviet Halley's Comet probe.
5. Soviet scientist who formulated the theoretical foundations of space travel.
7. Planet that Soviets and Americans would like to visit.
8. Cosmodrome for manned flight.
9. New Soviet Space Station.
11. Soviet unmanned Venus probe.
14. Soviet space taxi.
15. Cosmonaut who first visited Mir and who visited U.S. with Young Cosmonauts in 1986.
16. Military and unmanned cosmodrome.

FOOT-STOMPING IN ANY LANGUAGE — The Soviet delegation was treated to a square dance by Young Astronaut sponsor Action Packets in Orlando, Florida, complete with straw hats.

Also on the agenda in Huntsville was a stop at Marshall Space Flight Center where everyone viewed a Shuttle mock-up, a Space Station mock-up, the Manned Manuevering Unit and the bouyancy tank where astronauts try out equipment under water to simulate zero gravity conditions.

From Huntsville, it was on to Houston, Texas and a reception put on by Safeway Stores. The event gave the Soviet delegation a chance to see what is available in American grocery stores. Pepsi-Cola gave the group gift bags at the reception and later they were whisked off to the Warwick Hotel where rooms were provided for their Houston stay. Special events were planned by Dr. Carolyn Sumners and the Young Astronauts at the Houston Museum of Natural Science (more on that part of the trip on page 4).

After a fun visit to the Museum and Johnson Space Center, the government plane was waiting to take the group to New York City and the final leg of the Soviets' American trip. Donald Trump hosted the adults in the delegation for a special dinner as a welcome to the City. It was beautifully decorated for Christmas, and the Soviets enjoyed shopping, especially for electronic goods like radios. Young Astronaut Rica Buxbaum's school, the Robert F. Wagner Junior High School, invited the delegation for a special program. The student orchestra played, mimes entertained and dignitaries spoke. It was an enjoyable morning and later the delegation was treated to some shared computer time with students from Robert F. Wagner.

ENTERTAINING — The Soviet Young Cosmonaut delegation found many interesting things to see and do at the Robert F. Wagner Junior High School. The student body put on a show for the visitors which included music and mime.

A visit to the Empire State Building was of great interest to the delegation. The group rode the elevators to the 102nd floor and had a panoramic view of the entire city. Skyscrapers don't exist in the Soviet Union and the group was impressed by the height of the Empire State Building.

Other highlights of the New York visit included the Christmas show at the Radio City Music Hall complete with the Rockettes. The following evening, McGregor's Sports Specialties arranged for the delegation to enjoy an elegant dinner at the private club at Madison Square Garden. Afterwards, they had a chance to meet members of the New York Knicks basketball team. Adidas later hosted the delegation at a team basketball game.

had become our precious "drougs" in the 13 days they spent here in the United States. They had been given gifts at every stop along the way and Sasha said he came with two suitcases and was leaving with six. Pavel was interested in the number of hats and bags that the group was being showered with. At one point, he had 12 bags and 10 hats. There were also bags and sweatshirts specially designed by the Fashion Institute of Design and Merchandising and books from Bantam Books. In addition, special thanks has to be given to Rockwell International, United Technologies and the Harris Corporation for money they donated to fund the trip.

YOUNG COSMONAUT GETTING READY FOR TAKE-OFF — Igor Novikov, a member of the Soviet Young Cosmonaut delegation, tries some space equipment on for size at Marshall Space Flight Center in Huntsville, Alabama.

It was hard to believe, but the time had come for the delegation to leave. After a farewell brunch at the New York Marriott Marquis, the group boarded a bus for John F. Kennedy Airport and the flight home. Fifteen people

The Soviets were warm and wonderful people who left a special feeling whereever they went. When they left, they bid us all "dosvedanaya" or good-by.

TOO MUCH TOURING — It was an action-packed tour of the United States for the Soviet Young Cosmonaut delegation and Michayl Baskov and Pavel Kudryavtsev take time out for a little rest.

taff

oung Astronaut Council am operations running ht, Lorelle Goodpaster, T. thouser and Jennifer Rae. g, Lolita Hickman and Liane

Photo by: Vicki Warren

t to President Reagan in with his idea for an nization to foster young ple's interest in math and nce by using the excite- of the space program. gan assigned the idea to ffice on Private Sector tives and asked them to de whether or not the House should get id the plan. They voted to r it, after a Blueprint nittee designed a model ducational experts gave ea their okay. That was than two years ago and now the rest — 10,000 Astronaut Chapters, ational Youth Exchanges

ng Astronauts

CHOOL NAUTS

FIRST — Walnut Street Toms River, New Jersey, ry for their prize-winning bove. Chapter Leader were the largest group . Walnut St. Elementary tronaut Program for two t Chapters at the school dults joined the Young was viewed by 80,000

and rapidly growing interest at home and abroad in adopting the Program.

Butler's interest in space goes back to his days as an Air Force officer more than two decades ago. He then went to work for a variety of Presidents, from John F. Kennedy to Ronald Reagan.

Still he has been most successful as the leader of the Young Astronaut Program and predicts even better days ahead.

One of the keys to the growth of the Young Astronaut Program has been the top flight staff at the Council. At no time was it more essential then when the Program first got started. In those days, getting the ball rolling fell to Lolita Hickman, Butler's right hand "man." Today, Hickman is the Deputy Director for Administration and she watches over personnel and finance matters. She holds a Masters Degree in industrial psychology from Southern Illinois University and her specialty is organizational development.

Russ Ritchie, a newcomer from NASA, serves as Deputy for Operations. Russ oversees the programs and projects of the Council and makes certain that quality work is produced on schedule. Russ worked for 25 years as a federal executive and brings experience and space education knowledge to his post.

Mary Ellen Foster came on board in December, 1985 and for a time acted as secretary for Lolita and Wendell. Today, she is an administrative assistant and assists the accountant. Her years of experience in office work for the Defense Department draw other office workers at the Council to her for advice. She says that space is "a mystery" to her and is more interested in the Young Astronaut Program for what it does for children.

The Hon. Dick Funkhouser has been with Butler and the Program since its inception. He was a career Foreign Service Officer and Ambassador with the State Department and served in the Soviet Union, France, Romania, Vietnam and several African and Middle Eastern countries. It is only logical that Funkhouser head up the international side of the Young Astronaut Program. He has built up the foreign segment of the Program to 144 overseas Chapters and Satellites in 29 foreign countries and has negotiated exchange visits with Canada, Japan and the Soviet Union. Funkhouser also serves as "quality control" for all official documents and handles the "Pilot" schools which pretest Young Astronaut Program curricular materials in the classroom.

Lorelie Goodpaster serves as the accountant for the Council. She began overseeing the books in April 1986. Prior to her work for the Council, she served as an accountant with the Center for Strategic and International Studies. She holds two degrees — one in accounting and another in commercial education. One reason she came to the Council is she saw the potential for growth and she herself has witnessed it since she began working there.

A more recent arrival at the Council is Butler's personal secretary Liane Kerry, who started work last October. Kerry is also studying for a liberal arts degree at a nearby college. She is a science fiction buff and so has an indirect interest in space.

Linda Long serves as Butler's special assistant and helped organize the Soviet-American Youth Exchange. She was a member of the delegation to the Soviet Union in October and accompanied the Soviet delegation during their U.S. visit. Long, who has a law degree from Delaware Law School, worked for NASA and later served as a public relations person for Christa McAuliffe. She has been at the Council for about a year and has been successful furthering the organization's aims. Her next move is to help in marketing at the Council.

When you call the Young Astronaut Office, the first voice you usually hear belongs to Jennifer Rae, the receptionist for the Council for the past year. Before she came to the Young Astronaut Program, she worked in financial planning for two years. She has an undergraduate degree from Sweet Briar College in political science.

Congratulations to all for a job well done!

Contest News

Throughout the year, the Young Astronaut Council holds a variety of contests designed to challenge the creativity and imagination of Chapter members. Winners of one competition were recently selected — The Young Astronaut Space Olympiad Contest. Young Astronauts were asked to invent games that could be played in the zero gravity conditions of space and the 40 percent gravity of a Mars Space Station.

The entries were both imaginative and ingenious. Judging was difficult and T. Wendell Butler, Executive Director of the Young Astronaut Council, along with Glenn Swengros of the President's Council on Physical Fitness, commended all the participants for their outstanding ideas.

Congratulations to the following Young Astronauts for their winning entries:

Commander Level

First Place:
Sean MacNew
Roland Park Middle School
Baltimore, MD

Jeff Brady
Arcola Intermediate School
Norristown, PA

David Gradella
Ockerman Jr. High School
Florence, KY

Second Place:
Richard Essary
West Jordan Middle School
West Jordan, UT

Shane Pulver
Churubusco Jr. High School
Churubusco, IN

Brian Thomas
Bryson City Elementary School
Bryson City, NC

Jeremy Wiesbrook
Otter Space Young Astronauts
Streator, IL

Alberto Sanchez
Mary Help of Christians School
Tampa, FL

Ron Wales
Twin Spruce Jr. High School
Gillette, WY

Pilot Level

First Place
Jason Bates
Thomas E. Bowe School
Glassboro, NJ

Arin Leber
Woodlawn Elementary School
Danville, KY

Steve Bailey
Jerabek Elementary School
San Diego, CA

Second Place:
Michael Jensen
Douglas T. Orchard
Elementary School
West Valley City, UT

Allison Hipwell
St. Luke's Episcopal School
Baton Rouge, LA

Richard Miller
North Belle Vernon Elementary
Belle Vernon, PA

Jonathan Panz
A.J. Griffin Middle School
High Point, NC

Michael Murphey
Erie Elementary School
Erie, IL

Trainee Level

First Place:
James Wadell
Chadds Ford Elementary School
Chadds Ford, PA

Daniel Hesler
Lapeer Young Astros
Lapeer, MI

Laura Vrabel
Schuchard Elementary School
Sterling Heights, MI

Second Place:
Quentin Harrison
Charlotte Anderson Elementary School
Arlington, TX

Raj Singaraju
Club #923 Aliens
Alburquerque, NM

Keith Chilton
Southwestern Elem. School
Hanover, IN

Juan Pedro Sanchez
Young Astronauts of Cancun
Cancun, Mexico

Matthew Kemmis
St. Patrick School
Jaffrey, NH

Shelly Jo Engel
SkyMaker Pilots
Long Beach, NC

Additional Third Place and Honorable Mention winners were selected and are being notified by mail. Congratulations to all those who entered the contest. You did an outstanding job.

Trainee Answers

The Soyuz carries cosmonauts. The Shuttle will carry astronauts. The solar panels are the flat panels on the sides of both stations. The docking ports are the concentric round circles. The crew quarters are the cylinders. The antennas are obvious.

Pilot Answers

1957
Soutnik 1, the first artificial Earth satellite, is launched by the Soviet Union. "Laika," a part-Samoyan puppy, orbits the Earth aboard Sputnik 2.

1958
Explorer I, America's first satellite is launched on January 31.

1959
Luna 2 crashes to the Moon's surface. Luna 3 makes the first photographs of the Moon's far side.

1961
Yuri Gagarin becomes the first man in space. One month later, Alan Shepherd completes a suborbital flight aboard Freedom 7.

1962
John Glenn becomes the first American to orbit the Earth on February 20.

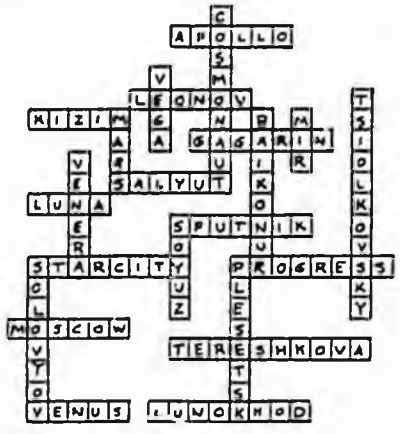
1965
On December 4, Gemini VII is launched and 11 days later Gemini VI lifts off. They meet each other in space for the first manned rendezvous

1966
The Soviet Luna 9 craft makes the first soft landing on the Moon.
Venera 3 crashes on Venus, the first man-made machine to land on another planet.
In December, Mariner 2 is launched and completes a 109 day mission and sends back the first useful information.

1968
Apollo 8 orbits the Moon with three astronauts.

1969
Apollo 11 lands on the Moon. Neil Armstrong became the first human to set foot on another world.

1970
Luna 16 lands on the Moon and scoops up materials which it returns to the Earth. Luna 17 discharges the robot Lunokhod 1, which explores the Moon.



Announcement for all Young Astronauts: Each Young Astronaut is eligible to receive a Personalized Membership Kit containing Young Astronaut stickers, a Certificate of Membership suitable for framing and a personalized Membership card. If you have not already sent for your kit, call toll-free 1-800-328-2791 (in Minnesota call collect: 612-881-3409) for more details about this special offer.

Young Astronaut Program List of Corporate Sponsors

Action Packets
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Allison
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Lee Company
Martin Marietta Corp.
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Xerox

The Young Astronaut Newsletter
is published by
The Young Astronaut Council
P.O. Box 65432
Washington, D.C. 20036

HOUSE COMMITTEE REPORT

(7)

Date referred: 3/17/88

FURTHER REFERRALS:

DATE: April 19, 1988

The Health, Education and Social Services Committee has considered CSSCR 37(HESS)

Relating to the Young Astronaut Program.

RECOMMENDS:

[ ] replace with ______________________ [ ] the same title [ ] a new title

[ ] attached amendment(s)

[X] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] additional referral to the ______________ Committee

ADOPTS: [ ] ________letter of intent

ATTACHES NEW FISCAL NOTE(s):

[ ] fiscal impact

[ ] zero fiscal note

[ ] zero with analysis

[ ] same as previous fiscal note published ______________

[X] same as previous zero fiscal note published 2/25/88

SIGNING DO PASS:

Johnny Ellis

[illegible]

Bill Hudson

Max F. Gruenberg

Niilo Koponen

Joyce Harley

Dave Donley

SIGNING OTHER RECOMMENDATIONS:

Niilo E. Koponen

Co Chairman's Signature

Johnny Ellis

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: CSSCR-37 (Hess)
PUBLISH DATE: 2/25/88

FISCAL NOTE

REQUEST:

Revision Date: _____
Title: . . young astronaut program. . .

Agency Affected: Education
BRU: _____

Sponsor: Uehling
Requestor: Senate HESS

Components: _____

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		Ø	Ø	Ø	Ø	Ø
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		Ø	Ø	Ø	Ø	Ø
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS : (Attach a separate page if necessary)

Prepared by: Steve Hole
Division: Commissioner's Office
Phone: 465-2800
Date: 2-19-88

Approved by Commissioner: William G. Demmert
Agency: Department of Education
Date: 2-19-88

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

SCR

39

HOUSE COMMITTEE REPORT

(7)

Date referred: 2/26/88 FURTHER REFERRALS:

DATE: April 19, 1988

The Health, Education and Social Services Committee has considered SCR 39

Requesting the State Board of Education to require the study of Alaska history and government in Alaska schools.

RECOMMENDS:

[ ] replace with HCS SCR 39 (HESS) [X] the same title

[ ] attached amendment(s) [ ] a new title

[X] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] additional referral to the ______________ Committee

ADOPTS: [ ] __________letter of intent

ATTACHES NEW FISCAL NOTE(s):

[ ] fiscal impact

[ ] zero fiscal note

[ ] zero with analysis

[ ] same as previous fiscal note published ______________

[X] same as previous zero fiscal note published 2/23/88

SIGNING DO PASS:

[signatures]

SIGNING OTHER RECOMMENDATIONS:

Co-Chairman's signature

[signatures]

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: SCR-39
PUBLISH DATE: 2-23-88

FISCAL NOTE

REQUEST:

Revision Date:
Title: . . Alaska history and government. .

Agency Affected: Education
BRU:

Sponsor: Hensley
Requestor: Senate HESS

Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING		Ø	Ø	Ø	Ø	Ø
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		Ø	Ø	Ø	Ø	Ø
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Steve Hole
Division: Commissioner's Office
Phone: 465-2800
Date: 2-19-88

Approved by Commissioner: William G. Demmert
Agency: Department of Education
Date: 2-19-88

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

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May, 1988

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS database CMPR. In order to save space copies of minutes have not been left in the files.

Mary Van Nimwegen

HHESS 4-19-88 8:30 a.m.

Alaska State Senate

P.O. Box V
Juneau, AK 99811
Phone: (907) 465-2444
465-3862/465-4923

P.O. Box 1069
Kotzebue Alaska 99752
(907) 442-2494

Senate Finance Committee
State Affairs Committee
Vice-Chair, Rules Committee
Chair, Administrative Regulation Review

William L. Hensley

M E M O R A N D U M

TO: Representative Niilo Koponen, Co-Chairman
Representative Johnny Ellis, Co-Chairman
House Health, Education, and Social Services Committee

FROM: Senator Willie Hensley

SUBJ: Resolution relating to the teaching of Alaska history and government in the schools.

DATE: April 18, 1988

Thank you for scheduling a hearing on my resolution requesting the State Board of Education to require students to complete one unit of Alaska history and government to graduate from high school.

The reasoning behind my proposal is set out in the resolution, which is attached, but I want to highlight one element: the 1987 report of the Alaska Commission on Postsecondary Education that 33 percent of Alaska's seniors surveyed said they had no educational experience in Alaska history. A copy of the Commission's news release is also attached.

Enclosures

ALASKA COMMISSION ON POSTSECONDARY EDUCATION
BOX FP - JUNEAU, ALASKA 99811
907/465-2854

News Release
Troubled Times - Troubled Students
September 1987

Last year's Alaska high school seniors were more critical of their high school experiences than any group of seniors in the last ten years reported the Alaska Commission on Postsecondary Education. In its annual survey of Alaska's high school seniors the Commission discovered that the 1985-86 seniors departed from a number of trends established by their predecessors. Dr. Kerry D. Romesburg, the executive director of the Postsecondary Commission, reported that "the percentage of seniors rating their overall high school experience as 'poor' more than doubled from previous years, and the number of seniors rating their high school experiences as 'outstanding' plummeted last year." Romesburg said, "this was only one of the disturbing results of the 1985-86 survey."

"Throughout the survey responses, one sees a reflection of the downturn in Alaska's economy," according to Romesburg. Last year's seniors placed much more emphasis on grades and quality of instruction than seniors in previous surveys. They also continued an increasing tendency to attend college out-of-state and a decreasing tendency to plan to return to Alaska after completing school. Less than half (only 43.3 percent) of the seniors who planned to attend college out-of-state said they planned to return to Alaska after graduation. Romesburg added that many students submitted written comments reflecting the poor job outlook in Alaska.

On a positive note, the survey reports that nearly two-thirds of the seniors still expressed general satisfaction with their high school training, and the seniors from Alaska's smaller high schools are much more pleased with the quality of instruction in their schools than were previous seniors. The findings also reflect that nearly two of every three seniors planned postsecondary education and an increasing number planned to attend a 4-year college or university. The most popular choices were the University of Alaska, Fairbanks and the University of Alaska, Anchorage. When asked why the seniors elected to attend school in Alaska or out-of-state, the responses varied. Those attending in Alaska reported it was due to low tuition and living expenses and closeness to home, while those attending out-of-state reported it was due to availability of program, reputation of school, or geographic location.

"A new aspect of last year's survey was to assess attitudes within specific target disciplines," said Romesburg. The survey is a joint project between the Postsecondary Commission and the State Department of Education. The Department selected the disciplines of natural resources, social sciences, and science to be targeted last year. Romesburg stated that the Department has not yet formally reacted to the report, but that he finds some results surprising. Nearly half of the seniors indicated no educational experience in the Alaska Native Claims Settlement Act and a full third of the seniors reported no educational experience in Alaska History, and of those who did have coursework in these areas, many felt the work was poor. "I believe a very legitimate question to raise is why a course in Alaska History is not a state requirement for graduation," said Romesburg.

SCR

46

(7)

HOUSE COMMITTEE REPORT

Date referred: 2/24/88 FURTHER REFERRALS:

DATE: 4-19-88

The Health, Education and Social Services Committee has considered SCR 46

Relating to "Better Safe Than Sorry" programs in elementary schools.

RECOMMENDS:

[ ] replace with _____ [ ] the same title

[ ] attached amendment(s) [ ] a new title

[X] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] additional referral to the _____ Committee

ADOPTS: [ ] _____ letter of intent

ATTACHES NEW FISCAL NOTE(s):

[ ] fiscal impact

[ ] zero fiscal note

[ ] zero with analysis

[ ] same as previous fiscal note published _____

[X] same as previous zero fiscal note published 2/22/88

SIGNING DO PASS:

SIGNING OTHER RECOMMENDATIONS:

Chairman's signature

STATE OF ALASKA
THE LEGISLATURE

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May, 1988

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS database CMPR. In order to save space copies of minutes have not been left in the files.

Mary Van Nimwegen

H HESS 4-19-88 8:30 a.m.

STATE OF ALASKA
1988 LEGISLATIVE SESSION

BILL VERSION: SCR 46
PUBLISH DATE: 2-22-88

FISCAL NOTE

REQUEST:

Revision Date:
Title: Relating to "Better Safe than Sorry" programs
Sponsor: Fisher
Requestor: Senate HESS

Agency Affected: Education
BRU:
Components:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 88	FY 89	FY 90	FY 91	FY 92	FY 93
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	Ø	Ø	Ø	Ø	Ø	Ø
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND	Ø	Ø	Ø	Ø	Ø	Ø
FEDERAL FUNDS						
OTHER						
TOTAL						

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Steve Hole
Division: Commissioner's Office
Phone: 465-2800
Date: 2-12-88

Approved by Commissioner: William G. Demmert
Agency: Education
Date: 2-12-88

Distribution (by preparer):
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MEMORANDUM

TO: Representatives Niilo Koponen and
Johnny Ellis, Co-Chairmen
House Health, Education and Social
Services Committee

FROM: Senator Paul Fischer P.F.

SUBJECT: SCR 46
(Better Safe Than Sorry Programs)

DATE: March 9, 1988

I would appreciate your scheduling the above referenced resolution before the House Health, Education and Social Services Committee at your earliest possible convenience.

I was prompted to introduce this resolution after running across an article in the Anchorage Times which impressed me considerably. In checking into this program, I found that it is not being offered statewide and I feel strongly that it should be. I think you'll find that the text of the resolution speaks for itself.

Senate Concurrent Resolution No. 46 was sponsored by all members of the Senate and passed the Senate unanimously on February 23.

PAF/sgn

'Password' safety method defeats stranger's advance

By Jean Lamming
Times Writer

A stranger lingered in a parked car at Bayshore Elementary School this week, watching students skating on an ice rink at an hour when most youngsters and teachers had gone for the night.

When a 9-year-old boy left the school grounds alone at 4:30 Tuesday, the man eased his car out of the parking lot and pulled up alongside the boy.

"He stopped by him, rolled down the passenger window and said, 'I'm a friend of your mom's and she sent me to pick you up,' " according to officer Joe Young of the Anchorage Police Department.

See Password, page A-8

Password: Safety

Continued from page A-1

From his perch on the curb, the youngster had one retort, Young said. "The boy said, 'What's the secret word?' "

Seconds later the boy's mother drove around the corner and saw her son standing there.

The man was gone. He didn't know the password.

"It worked perfectly," the boy's father said Wednesday. "It's a simple matter of using one rule: if they don't know the secret word, you don't go with them."

The father, who didn't want to be named, hadn't expected his son to be enticed toward a car in the quiet, Bayshore neighborhood, especially when the elementary school sits practically within sight of their home.

"It can happen anywhere — that's what blew us away," the father said.

"But he's fine. He knows he's safe and protected and we praised him a whole bunch."

The boy's mother can't remember where she got the idea for the password, whether her son brought it home from school or heard it on a "Care Bear" record.

Dorothy Oetter, a health and physical education coordinator for the Anchorage School District, wasn't suprised when she heard about the boy's response.

"Oh, wonderful," Oetter said Wednesday. "That's part of what we teach in our program at grades one, three and five.

All elementary schools in the district teach a "Better Safe Than Sorry" unit in certain grades. The unit includes a parent night where safety messages are passed to the home, she said.

The program will be expanded this year to include all grades.

School nurses and police officers also teach youngsters the safety rules, Oetter said.

Young said the boy was able to give police a detailed description of the man. The 9-year-old said the suspect was a white man with tanned skin and light brown hair, who looked to be in his late 20s. He was wearing a black leather flight jacket with a "Cobra" patch on the left chest. There was a picture of a snake and a helicopter with it.

He also wore dark blue pants, a green shirt and sunglasses.

The car was a dark color with chrome rims on the wheels and bucket seats.

When the boy asked the man what the secret word was, the man guessed "Top Gun," the father said.

Young said the ploy the man used to entice the youngster is only one of many ruses people use to lure children away.