

## Fermilab/BNL/LBL Design is Magnet of Choice for SSC

The SSC Magnet Selection Advisory Panel, in a report to the director of the SSC Central Design Group at Berkeley, has recommended the Reference Design D magnet and cryostat option as their choice for the Superconducting Super Collider (SSC).

The Design D magnet, the product of a collaboration between Fermilab, Lawrence Berkeley Laboratory (LBL), and Brookhaven National Laboratory (BNL), is a high-field, 6-T, 4-cm aperture, cold-iron magnet.

"The selection of this design is important to the Laboratory because we've invested a lot of our R&D efforts into it, and we're pleased that the community

thought it was the correct design," commented Associate Director Richard Lundy. "We're anxious to go ahead and work on it in the coming year."

Fermilab's contributions to Design D centered on the cryostat, or outer, areas of the 60-ft long magnet. Additionally, the Lab developed the original concepts for the magnet supports and engineering design for vessel manufacture.

BNL and LBL concentrated their efforts inside the single phase shield, the magnetic circle itself, which is held at an operating temperature of 4.3° K. "Basically, it's a Fermilab outside, and a BNL/LBL inside."

cont'd on page 2

## Jostlein Brings Another IR-100 Award to Lab

Hans Jostlein of the Accelerator Division is the latest in a long line of Fermilab recipients of the IR-100 Award.



*Hans Jostlein with his IR-100 award-winning Magnetic Wire Position Transducer.*

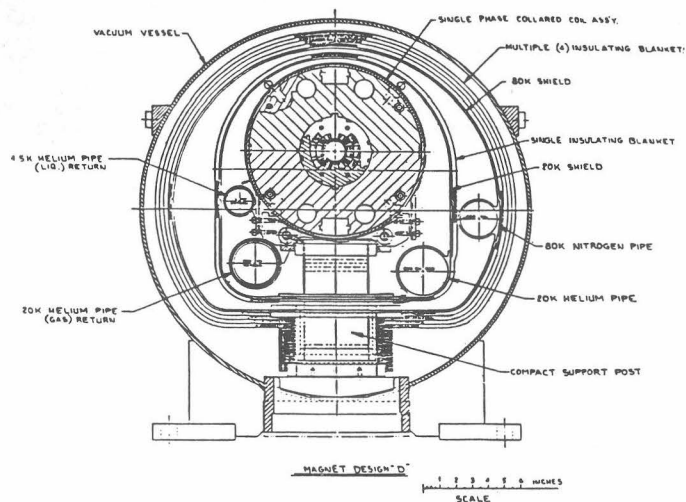
Jostlein's Magnetic Wire Position Transducer (MWPT) was recognized by Research and Development Magazine as one of the outstanding technological developments of 1985.

The MWPT grew out of a need at Fermilab to achieve precise alignment of magnets in the Antiproton Source. Control and survey of the magnets is done from the Antiproton Source central control room, located above ground at some remove from the tunnel which is secured during running periods. The required magnet alignment accuracy is 0.05 to 0.2 mm in a straight line over the 10-20 m length of the magnets.

The MWPT achieves alignment by means of a wire, carrying an electrical current (1 A rms of 3000 HzAc current), stretched through the center of one or several wire position transducers. These transducers are wound like a transformer, two coils in a buckling configuration, the output voltage adding to zero. A horizontal displacement increases voltage which can be registered remotely, and appropriate corrective action can be taken.

According to Jostlein, the MWPT could be adapted to survey machinery continuously and by computer; to monitor ground settling in conventional construction; or in any location where access is not practical. ✻

"Magnet" cont'd from pg. 1



One immediate effect of this choice has been the reduction of ring-size from 100-miles circumference to 60 miles. "With a high-field design," Lundy explained, "if you fix energy at 20 TeV, as the Design Group has, and you define the magnet field, a simple ratio of those two things tells you what size ring you have to build. Later, you might find a reason for building a slightly different size ring, or utilizing a slightly different field, because a new cost optimum might result, but at the time, that's what was proposed.

"The Magnet Selection Advisory Panel took a lot of things into consideration, and total project cost was one of the significant ones. Among other considerations, the high-field design showed the lowest total cost, and the necessary readiness for industrial participation."

Fermilab's efforts in the evolution of the Design D magnet were centered in the Technical Support section.



**Dunn's Discovery.** The shortest measurable interval of time is the time between the moment I put a little extra aside for a sudden emergency, and the arrival of that emergency.

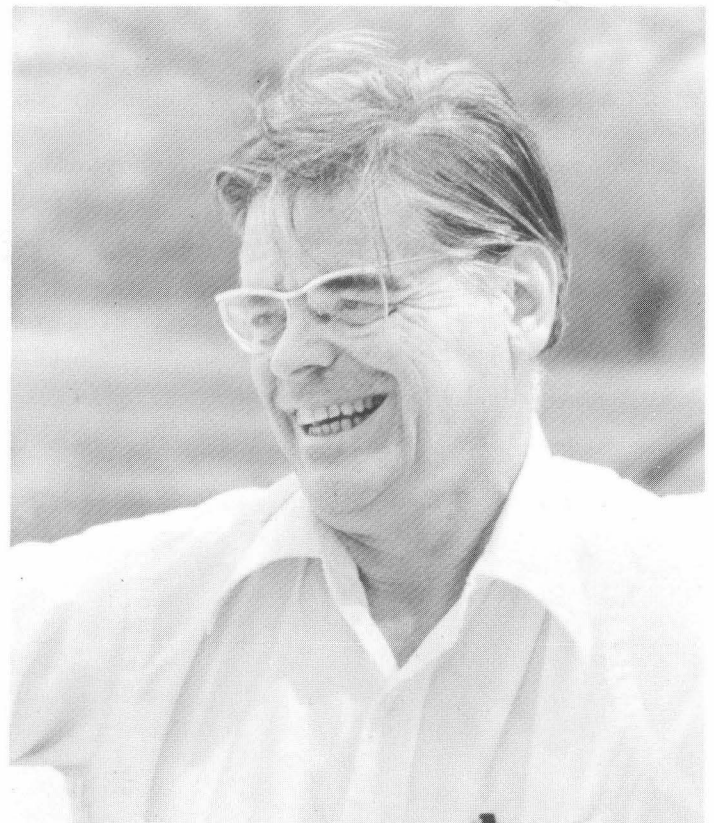
**Gell-Mann's Dictum.** Whatever isn't forbidden is required. **Corollary:** If there's no reason why something shouldn't exist, then it must exist.

**Oppenheimer's Observation.** The optimist thinks this is the best of all possible worlds, and the pessimist knows it. (From *The Official Rules*.)

## R.R. Wilson Wins "Historic" Award

Fermilab's founding director and master accelerator builder, Robert R. Wilson, received an historic award for High Achievement in Science presented by the U.S. Summer School on High-Energy Particle Accelerators during ceremonies at the 5th U.S. School held at SLAC, July 25, 1985.

The three recipients were Robert Wilson "For building the first strong focusing synchrotron and for his pioneering role in the development of high energy accelerators" and Ernest D. Courant and M. Stanley Livingston "For the discovery of the principle of alternating gradients and for the conceptualization of strong focusing accelerators."



Robert R. Wilson

These awards represent a record of the events which have shaped the science of particle accelerators and consist of a parchment scroll signed by leading members of the worldwide community of science and a metallic sculpture symbolizing excellence in modern society.

**Text of Robert Wilson's acceptance speech:** "I decided to announce tonight a principle stronger than strong focusing, rising to Norman Ramsey's challenge in his talk. My principle is the principle of strong companions. If I have ever done

cont'd on pg. 5

## "Moving Picture Mime Show" is Next in Arts Series

The frantic antics and sassy sounds of the Moving Picture Mime Show from London come to Ramsey Auditorium on Saturday, October 19, 1985, at 8 p.m.

The trio's unique combination of masks and clowning builds on the tradition of classical mime, adding music and noisy punchlines to achieve an utterly modern effect.

The three "clever and imaginative young men" of the Moving Picture Mime Show turn themselves into a cast of thousands. Their performance here will include **"The Creatures of the Swamp,"** an hilarious parody of those classic B-horror movies in which the performers brilliantly impersonate almost every creature of the swamp and of the world we live in. Also on the program is **"Handle With Care,"** a touching and funny story of the residents of an old-folks home which is performed with "wondrously comical" masks. For their performance of **"Handle With Care,"** the actors have been praised for "immaculate timing" as well as their "marvellously expressive bodies."



*Moving Picture Mime Show*

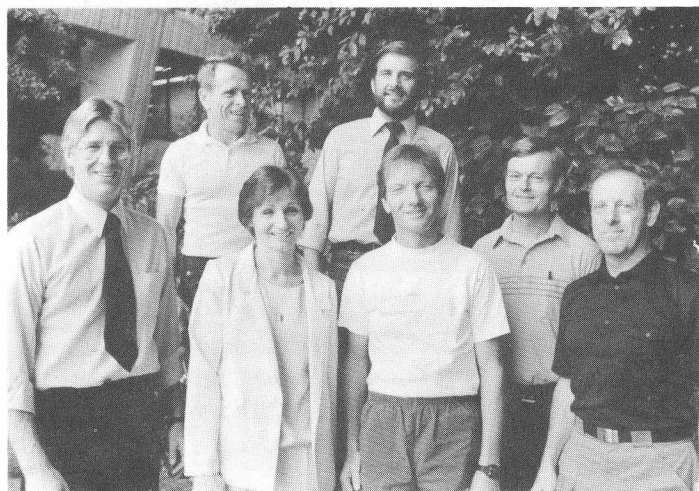
The members of the Moving Mime Show, Paul Filipiak, David Gaines, and Toby Sedgwick, met while studying at the Jacques Lecoq School for Movement in Paris. They formed their troupe upon returning to London in 1976, and since then have

performed in the major capitals of Europe and the Far East. In 1981, the trio first performed in the United States at the International Theatre Festival in Baltimore where critics raved about their ingenuity.

Don't miss this "impressive evening of observation and wit from a genuinely original company." Tickets to the performance are \$7, and tickets are available at the Information Desk in the Atrium of Wilson Hall. For phone reservations or further information, call ext. 3353 between 10 a.m. and noon or 1 p.m. to 4 p.m. Phone reservations are held for five days awaiting payment. Due to ticket demand, those reservations not paid for within five working days are released for sale.

—Jane Green

## "America's Marathon" Needs You !!



*Fermilabs runners in the America's Marathon are, from left, Jim Jensen, Merle Haldeman, Pat LaVallie, Rich Rebstock, Lloyd Klein, Roger Dixon, and Dick Adamo. Not shown are Mark Schmitz, Steve Conlon, and Rich Meadowcroft.*

A 26-mile Sunday morning run sounds like an activity that would really wake you up! Ten Fermilab employees are planning to do just that. These individuals have registered to run in "America's Marathon 1985 Chicago" on October 20, 1985.

The 26.2 mile course begins at 8:45 a.m. in Chicago at the Daley Plaza and ends in Lincoln Park. This group of Fermilab runners would like to see you join them.

See Marilyn Paul in the Activities Office, WHLE, for registration forms. For more information contact Merle Haldeman, ext. 3958.



## Atrium Reception Desk Located at Busy Intersection

Whether it's directing traffic, answering questions, selling movie tickets or Fermilab t-shirts, or providing information and direction for persons walking through the Wilson Hall front doors, the **Atrium Reception Desk** in Wilson Hall keeps Rose Broomfield very busy!

The amount of work Rose, who is now a part of the Activities Office, does is staggering:

During the month of July, Rose sold over 400 Plitt movie tickets, and in the month of August, over 500 movie tickets were sold. One hundred and fifty Fermilab T-shirts were sold between the months of July and August.



*Dave Austin of Safety stops to chat with Rose Broomfield at the Atrium Reception Desk.*

All of the Auditorium Series reservations, publicity, and ticket mailings, as well as records maintenance...selling Ravinia Coupon Books and preparing weekly sales reports and then sending them to Ravinia...for NALREC, selling Plitt Theater movie tickets, and novelty items such as Fermilab visors, t-shirts, jackets, and sweatshirts...for NALWO, Fermilab post cards and note paper are sold...swimming pool passes and gymnasium memberships are sold at the Reception Desk...and discount tickets for Great America and Rose Theater tickets.

Because Chez Leon is now a part of the Activities Office, reservations for lunch and dinner are accepted at the Atrium Reception Desk.

After attempting to conduct this interview during the day, and being interrupted a million times by the phone

ringing, or a person with a question, or someone asking where the Personnel Office is, or people asking if there are Plitt tickets available, I finally gave up, and spoke to Rose after the Reception Desk was closed.

Rose said, "I really love the variety of people I get to meet working at this desk...although it does get to be a little hectic sometimes."

"I'm beginning to believe that the Activities Office is just that--lots of activities!" Marilyn Paul, head of the Activities Office added, "We offer a tremendous variety of services as a convenience to the Laboratory."

New hours for the Atrium Reception Desk are from 10 a.m. to 12 p.m., and from 1 p.m. to 4 p.m. daily.

When calling Rose for information at other times, don't be surprised when you hear a recorded message. This message will remind you of the hours the Reception Desk is open and brief you on upcoming events.

—S. Winchester

**Next: Chez Leon — some diner's viewpoints**



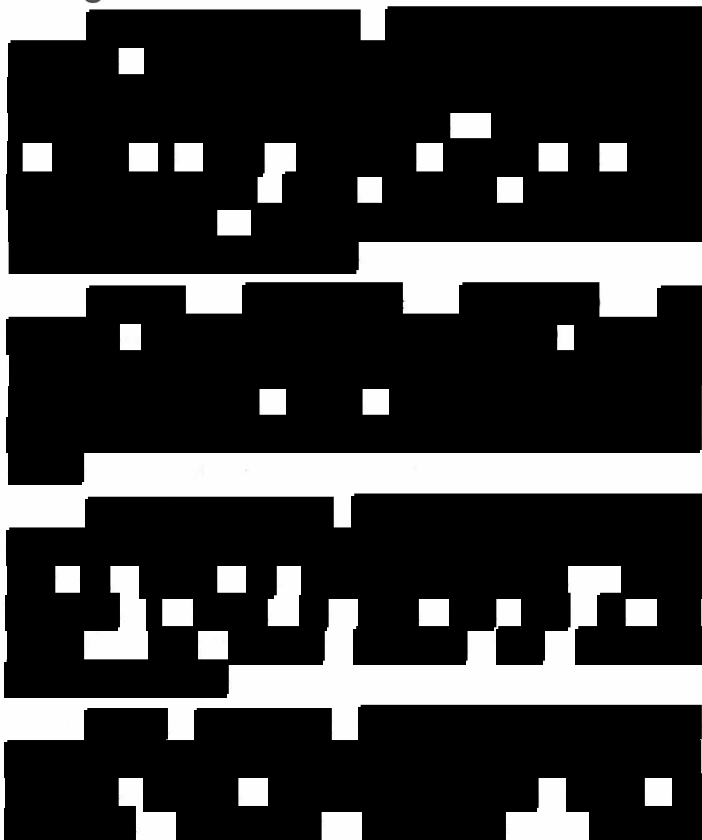
### **Bruise Brothers**

Stateville Prison, Joliet, IL

**THE BRUISE BROTHERS ARE HERE!!!**  
They will be appearing one night only at the NALREC "Lucky Fifties Night" held in the Village Barn on Friday, October 4, at 5:30 p.m.

Food and refreshments will be available; enjoy a D.J. spinning 50's favorites; jump downstairs for a taste of Las Vegas "where the action never stops."

## Congratulations To ...



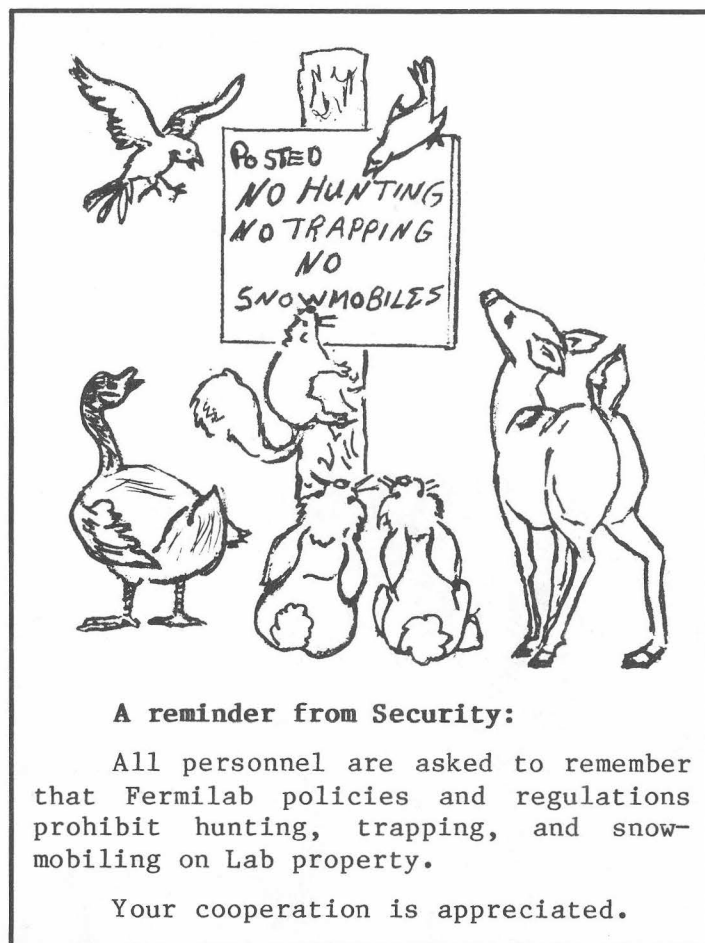
weighed 7 lbs., 11 oz., and was 20 in. long.



... "Wilson" cont'd from pg. 2

anything, it was to have some strong companions. At Cornell, where my companions built the strong focusing accelerator, that was my first exposure to this new (or old) principle. I am thinking of Boyce McDaniel, Rafael Littauer, John Dwyer, Albert Silverman, I could go on to name seven or eight other people who really built that machine. So, this is a wonderful principle. It turns out that with the principle of strong companions, all you have to do is to indicate to your fellows that you want something done, and if the companions are strong, they do it. Having demonstrated this principle at Cornell, I found it almost trivial to go to Fermilab. With the few strong companions - presto - they did it. I suspect that someone has found out about that here at Stanford, and I think it is a general principle throughout these high energy labs. Thank you."

The awards are made possible through contributions from the Houston Area Research Center, Universities Research Association, Varian, and the Westinghouse Electric Company.



## NALREC Readies for Ski Weekend

NALREC is offering a ski weekend at Telemark Ski Club in Cable, Wisconsin, on February 7, 8, and 9, 1986.

Costs for the weekend are based on number of occupants per room, and type of skiing (downhill or cross country). The fee covers lift-tickets for downhill skiers for two days, two nights' lodging, breakfast on two mornings, and round-trip transportation. Saturday night will feature a wine and cheese party with ski movies and demonstrations. Ski rentals are available at the slopes.

A deposit of \$10.00 is required by October 4, 1985, 50% of the balance by December 6, 1985, and full payment by January 17, 1986. One day of vacation time is required.

For detailed costs and more info, call Ed Justice at ext. 4554 or page 867, or John "J.J." Jones at ext. 4191.



Editor: R. Fenner; Assoc. editor: S. Winchester  
Photography: Fermilab Photo Unit

Fermilab is operated by Universities Research Association, Inc. under contract with the U. S. Department of Energy. Fermilab is published by the Publications Office, P. O. Box 500, Batavia, IL 60510, phone (312) 840-3278.

## This Barn Dance is for Real

When the Fermilab Folk Club and the Fox Valley Folklore Society hold a barn dance, they hold a barn dance.

"The Village Barn here at Fermilab is the only real barn available to us," said Gene (*Computer Operations Manager*) Dentino of the Fermilab Folk Club. "Most barn, or square, dances are held in basements these days, so having access to a real barn gives us a genuine atmosphere and makes the evening all that more enjoyable."



*The Fermilab Folk Club dances up a storm in the Village Barn.*

Traditional square dances and contra-dances such as "Take a Peek," "The Butterfly Whirl," and "The Texas Star" are played by the members of the Chicago Barn Dance Co., a top-notch barn-dance musical ensemble. Caller Tony Scarimbalo walks the dancers through each number before the actual dancing begins. "The band likes to emphasize the fact that they teach as well as play. That makes for a very social, open atmosphere," Dentino pointed out. "These are family-oriented evenings."

In addition to group dances, the traditional American folk-art of clog dancing is performed and demonstrated at every session.

The next barn dance will be held on Sunday, October 13, 1985, at 7 p.m., in the Village Barn, and on the second Sunday of each month thereafter. Admission is \$3 for adults, \$1.50 for children. Light refreshments are available.

For further information, call Gene Dentino, ext. 3838.

## Free Uniforms for Karate Students

All students enrolling in karate classes before October 28, 1985, will receive a free uniform (regularly \$30). Tuition is \$36 for 10 weeks; classes meet Monday, Wednesday, and Friday from 5 p.m. to 6 p.m. in the Recreation Complex. Call Mark Leininger, ext. 4776 or (312) 695-3263. ❀

## A. McLerran Authors Book

Alice McLerran, whose husband Larry is a member of the Astrophysics Group, is the proud author of *The Mountain That Loved a Bird*, a picture book for children and adults. The pictures gracing this gentle fable are by Eric Carle, one of America's foremost illustrators.

*The Christian Science Monitor* called the book "A parable about life." McLerran said the book is for "Everyone [who] can remember something that they wanted to last forever."

An autograph party for Alice McLerran is scheduled for October 5, from 1 - 3 p.m. at McGregor's Bookstore in Batavia. ❀

## Recent Retirements ...

**Joan Runde** began working at Fermilab on June 29, 1975, as a Telephone Operator in the Communication Center. Joan then transferred to the Mail Room and retired on August 30, 1985, as a Mail Room Records Clerk.

**Paul Linden** began at Fermilab on December 8, 1969, as a Maintenance Man. Paul then moved on as a Maintenance Mechanic in the Mechanical Shop. He retired on September 30, 1985. ❀

On Friday, October 11, and Saturday, October 12, the Fermilab International Film Society will present a Japanese Film Festival in Ramsey Auditorium.

On Friday, October 11, at 8 p.m. **The Seven Samurai** will be shown. On Saturday, October 12, **Geisha** begins at 8 p.m. Capping off the festival at 10 p.m. will be **Throne of Blood**. Admission is \$2 for adults, and 50¢ for children. Tickets are available at the door.

THE DISADVANTAGED

**YOU MAKE THE DIFFERENCE!  
THANKS TO YOU, IT WORKS  
FOR ALL OF US!**

THE POOR

THE DISABLED

THE ENTIRE COMMUNITY



The time of the year has arrived when employees are asked to contribute to charities through payroll deductions or one-time contributions. Using the payroll deduction plan, an employee may choose up to three charitable organizations including a community fund.

In mid-October, employees will receive the authorization forms. No pledge below \$12.00 for 1986 can be accepted through the payroll deduction plan. The selected charities must be among those approved by the Internal Revenue Service.

The payroll deductions an employee designates will be made each pay period beginning January 1, 1986 and will continue throughout the year. At the end of 1986, employees taking advantage of this plan will receive a statement of their contributions for income tax purposes. Pledges for the 1985 year will end December 31 unless they are renewed.

For additional information, please contact extension 4632 or 3415.



**United Way  
Crusade of Mercy**



**FOR SALE:**

**AUTOS:**

1981 FORD FUTURA. 2-dr. cpe, 4 cyl., auto. trans., P/S, P/B, AM/FM, approx. 47,000 mi., light blue; \$2200. Call Jack Upton, ext. 3996.

1976 VEGA STATION WAGON. Good runner, good condition, original miles; asking \$650. Call David, ext. 2071 or 897-9355 evenings.

**MOTORCYCLES:**

1977 XS-750 YAMAHA. Low mileage, w/full ferring, excellent condition; \$1000. Call Mary Barath, ext. 3120 or 554-1922 after 4:30 p.m.

1974 HONDA 750. Low miles; \$800 or best offer. Call Chery, ext. 3222 or 830-8049 evenings.

**LAND:**

20 ACRES AGRICULTURAL AND 20 ACRES WOODED LOT. Includes barn and utilities. Call Dave, ext. 2071 or 897-9355 evenings.

**MISC:**

1971 TRAILSTAR CAMPER. Sleeps 6, gas stove & furnace, ice box, 5 gal. water tank w/two-way sink, porta-potti, large awning; \$800. Call Barb, ext. 3235.

1970 COLEMAN POP-UP CAMPER. Sleeps 8, needs some work; \$500 or best offer. Call Jim Dowd, ext. 3792.

For the following items call Mark, ext. 4776 or (312) 695-3263 evenings: Magnavox 19" color TV, excellent condition, \$130; Gravely lawn tractor, 14 h.p. convertible, 2-wheel tractor, 40" commercial mower, sulky, \$1700; Gutter heaters, \$25.

CONN TROMBONE. Good condition, just right for beginner; \$150. Call Fred Walters, ext. 4248.

5-HOLE FORD STYLE RIM AND GOODYEAR WHITE WALL TIRE. New, HR78-15 polyglass radial, mounted and balanced; \$50. Call Bill, ext. 3169.

For the following items call Roy Thatcher, ext. 3144 or 665-8246 evenings: Perego carriage/stroller/car bed, navy blue and white, excellent cond., \$75; Automatic cradle/swing, 45 min. wind-up, excellent cond., \$30; Field's best "Wonder Horse", excellent cond., \$30; 40x40 Winnie-the-Pooh play yard w/thick pad, excellent cond., \$30; Baby walker, adj. height, \$20; Creative Playthings slide/gym, \$20; Single seat fold-up stroller, \$15; Toddler safety car seat, \$10. Prices negotiable on most items.

For the following items call Ralph Niemann, 985-5745: Automatic 6" flue vent damper, \$30; Mens 24" 10-speed bike, \$40; Mens 20" Moto-cross w/parts, \$30; Four-place bike rack, \$20; Yamaha E-flat alto saxophone, \$300; 10" Sears Craftsman w/drawer table and dust collector, \$275.

continued on reverse

For the following items call Dave, ext. 2071, or 897-9355 evenings: Realistic AM/FM radio/8-track, \$45; Heavy duty 1/2" drive socket set and extra deep well set, \$60; Weight set including dumbbells and bench, \$60.

SOFA AND CHAIR. Made of pine and covered w/light brown and red design; asking \$165. Call Bernard Clark, ext. 4737 or 231-0337 evenings.

For the following items call Ed Dijak, 690-1145: Snapper lawn mower, electric start, variable speed, self propelled, w/grass catcher (rear bagger), 3.5 h.p., \$100; Murry lawn mower, self propelled, 4 h.p., \$50.

**WANTED:**

Needed for cancer patients treated at the Fermilab Neutron Therapy Facility--a color T.V. and a V.C.R. (V.H.S. type). These will be used to explain the treatment and procedures to patients and their families. Donation of these items (new or used) is tax deductible. Call ext. 3865.