

PECHNYO

introduction

Perhaps the most unique and interesting event to be seen on a college campus takes place each April during Spring Carnival at Carnegie-Mellon University. The Sweepstakes, or as it is commonly called, the "Buggy Races", is a one-of-a-kind combination of soap box derby race and track and field relay race rolled into one.

The race takes place along the hilly streets of Pittsburgh's Schenley Park, adjacent to C-MU's campus. A team consisting of 5 "pushers", a driver, and a buggy works against the clock, trying to cover the course in the least amount of time by pushing the buggy up the hills and letting it roll down hill as quickly as possible.

The race is run in the following manner. At the corner of Margaret Morrison and Tech Streets, three buggies line up, side by side, on the street. At the sound of the gun, the first pusher propels the buggy up the first hill, "Hill 1", until he reaches the intersection of Tech and Frew Streets. At this point, another pusher takes over and runs the buggy up over the crest of the hill, "Hill 2", and, with all his might, "pushes off" the buggy for a period of "free-rolling" down hill through Schenley Park.

The race is now in the driver's hands as he guides his vehicle around the curves of Schenley Drive, past Phipps Conservatory and down hill toward the bridge which connects Schenley Park with Oakland. Just before the bridge, the driver takes a sharp right hand turn through "the chute" and begins rolling back up hill along Frew Street. At a point near Scaife Hall, a third pusher is waiting to "pick up" the rolling buggy. He grabs the push bar and runs the buggy up "Hill 3" to the end of Baker Hall.

At Baker Hall, another exchange is made and a fourth pusher begins the long steep push up "Hill 4" toward Hunt Library.

Near the entrance to Baker Hall starts "Hill 5" where the last pusher takes over for the final sprint to the finish line at the intersection of Tech and Frew Streets.

All this takes place in less than 2½ minutes, covering a distance of about eight tenths of a mile. Speeds can reach 50 mph or more during "free roll" as the buggy accelerates into "The chute".

To many the most fascinating aspect of the race is the buggies themselves. The result of countless hours of work and costing up to a thousand dollars or more to build, these completely hand-crafted vehicles are far removed from the soap box derby racers they resemble. To improve performance years of modification, testing, and "tuning" go into the buggies, and the technology developed through the years is a jealously guarded secret.

The races are a 50 year tradition at C-MU and attract scores of students, alumni, and local people. To insure safety, an extensive set of rules, developed with the cooperation of the school, governs all phases of buggy construction, practice, and the races themselves. Meetings of the chairmen of the competing organizations insure coordination and cooperation during the months of practice before the races.

A true test of one's ability to design and build a sophisticated vehicle, the intense human involvement which is characteristic of not only the designers and builders, but also the pushers and drivers, makes The Sweepstakes an exciting and unique event to behold.

history

The races themselves have over a fifty year history which started in 1920. Since then, the buggy races have become a tradition. Through the years the contest gained more popularity and respect. It became known as "The Derby", and finally as the familiar "Sweepstakes".

In contrast to the present day single man version, the old buggies provided a double seat, one for a driver, the other for a mechanic who was needed at the pit stop. Fraternities were required to insert fresh pushing teams at the beginning of the home stretch to assure a breakneck finish. Among the early rules were a sixty pound minimum weight requirement and four wheels. The number of pushers was changed from one to four in 1925, as the course was changed to one resembling the present stretch. The old course started at Margaret Morrison, ran up Tech Street, down toward Westinghouse Pond and Panther Hollow Bridge, and up by Flagstaff Hill. The finish line was near the present location of Scaife Hall.

Early winning times averaged $4\frac{1}{2}$ minutes, an amazing feat for the boxy models of the twenties. By 1930, Beta Theta Pi had reduced the record to under three minutes, a far cry from the Iota Sigma Delta record of 4:38 in 1921.

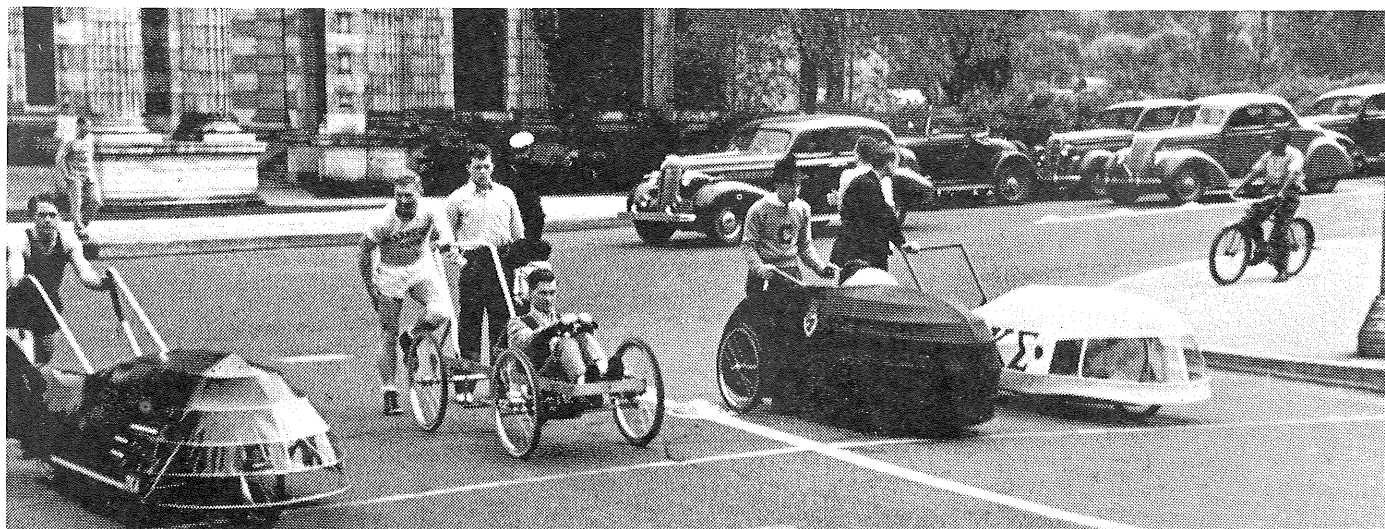
Buggy designs also changed quickly. By the 1930's the automobile became the major model for the design of the buggies. In 1938 Pi Kappa Alpha was influenced by the airplane. In that year they entered a machine which was twelve feet long and consisted of a light steel tubing frame which supported an aluminum framework. Airplane silk covering formed the exterior of the buggy. The driver rode in the prone position and looked through a window of cyralin, a transparent material. The machine weighed a meer 110 pounds.

With the advent of World War II and aluminum hoarding, the race and Spring Carnival were discontinued. After the war, however, Carnival began again. Delta Tau Delta won race after race until 1953. It was in this year Alpha Tau Omega won with a buggy called the "Green Flash". In 1956 the ATO's first introduced their six-time winner, the "Golden Goose". By this time, buggies came close to their present day form, except for two innovations implemented by Phi Kappa (now Phi Kappa Theta) and Sigma Alpha Epsilon.

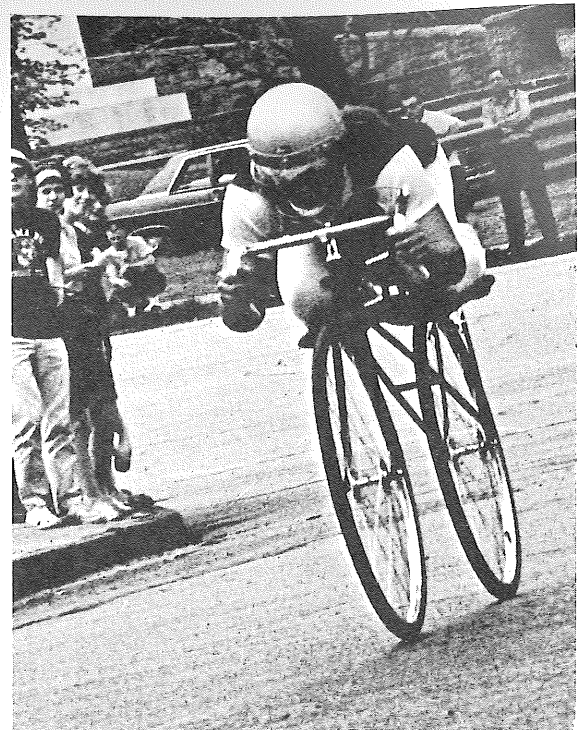
In the mid-fifties the Phi Kap's introduced the first fiberglass unibody construction. SAE came in with their controversial bicycle design in 1961.

Seven years later, a new PIKA buggy, "Tiger Shark II," shattered the course record by almost four seconds, setting the present record of 2:20.9. That year Beta Theta Pi won their fourth design trophy in a row. Currently they have won seven out of the last eight first places in design.

Last year's races were filled with conflict as the second day of racing was rained out. Phi Kappa Theta, followed by PIKA and Sigma Nu, emerged the victor with a time of 2:24.0.



designing a buggy



Designing and building a buggy is a major undertaking for any organization competing in the Sweepstakes. The rules require that a buggy be built entirely by students, and, due to the unique nature of the race, few ready-made parts are available. For these reasons, buggies are entirely handmade, from the sleek fiberglass bodies, to the intricate steering, braking, and suspension systems. There are few generally agreed-upon ways to build a buggy, but some areas of the design receive a great deal more attention than others. The following paragraphs discuss some of the things the designer thinks about when building a buggy.

Since the rules dictate little about the basic design of the buggy, the first decision that the designer must make is principally a philosophical one: "What kind of buggy is it going to be?" A copy of an existing buggy or an entirely new design? For the race trophy or for the design trophy? Simple or complex?

At one end of the scale are the bikes: lightweight, easy to push, foolproof. At the other end of the scale are the buggies: fast rolling, sophisticated, and fascinating to look at. Frequently, in buggy building, the ability of the organization to design an advanced buggy is far outstripped by their ability to fabricate and finance the proposed design. Results in the race are the main goal of the design and hence

many designers compromise their desire to build a sophisticated buggy, in favor of a more simple design. Nevertheless, for the sake of the design trophy, many buggies sport such goodies as disc brakes, fully independent suspension systems, and flawless body work.

Regardless of the philosophical basis of the design, the main technical problems center around energy. All the forces acting on the vehicle must be carefully analyzed to allow the buggy to move at maximum speed throughout the race. Energy is available to move the buggy from the pushers and the down hill grade of free roll. Although energy can be wasted through such things as improper pushing technique and bad driving, the three main sources are through air friction, bearing friction, and rolling friction. The degree to which these energy problems are solved, the strength of the push team, and the skill of the driver, determine the winners of the race.

Prime among the problems to be confronted is that of weight. A heavy buggy is harder to push and doesn't roll down hill significantly faster. With the recent emphasis on safety and the increasing speeds, keeping the weight down without jeopardizing safety is a major problem. Exotic materials such as tool steel, high strength aluminum alloys, and fiberglass unibody designs help to lower the weight of the frame.

The wheel assemblies probably receive more attention than any other part of the buggy because this is where most of the energy losses take place. Steering geometry, wheel alignment, type of bearings, among other things, are critical if the buggy's performance during free roll is to be exceptional. Money may be a big factor here because of the high cost of the fabrication of these components. Without spilling any secrets, it is safe to say that the design of the wheel assemblies are by far the most carefully guarded of all a buggy's secrets.

Aerodynamics are another area of concern. Designing a shape that is aerodynamic is not too difficult, but designing one that is almost skin tight, lightweight, and strong is quite another. The buggy, in general, should be shaped so as to cause a minimum amount of turbulence as it passes through the air. This can be accomplished through a multitude of means, including streamlining of all parts of the body and minimizing the frontal area of the buggy. At the speeds at which buggies travel, aerodynamics only play a role during the high speeds encountered in "The chute". The shape of the body is frequently determined more by the underlying structure than by the designer's wishes for a snazzy shape.

Other problems that crop up in the design are that of suspension systems, braking systems, and the push bar.

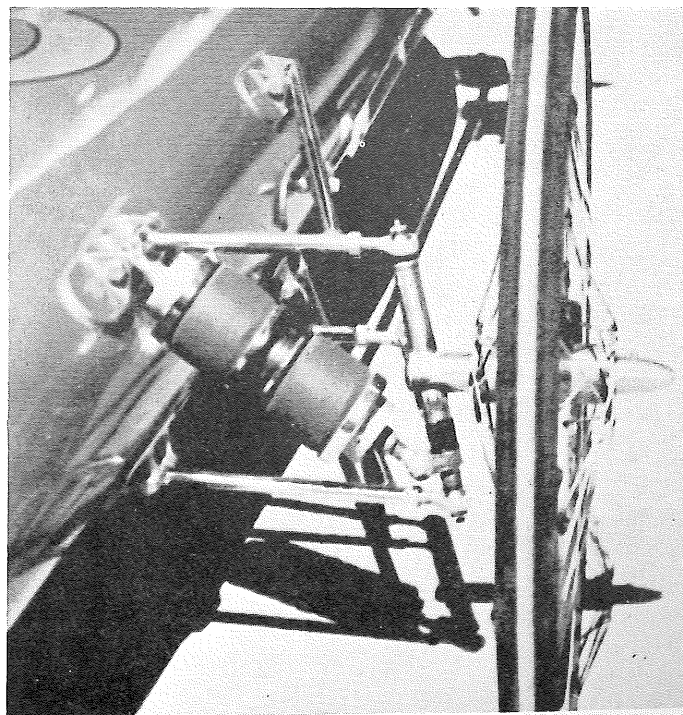
Suspension systems are one area in which buggies vary greatly. Some have rock hard axles with virtually no deflection while others have elaborate, fully independent systems using torsion bars or springs. An effective suspension system is harder to fabricate than none at all and the advantages of such systems are not clear, since race results show that there is little correlation between the type of suspension used and rolling speed.

Braking systems also vary in complexity. Required by the rules, brakes range everywhere from jazzy disc brakes to simple bicycle brakes. Adding nothing to the speed and frequently resulting in frustration and disappointment when they aren't operating properly, a buggy's brakes are never normally used during a race and hence are primarily for emergencies.

During two thirds of the race, a pusher is propelling the buggy, so the push bar must be "working right". The angle, height, and mounting must all be engineered to insure the maximum pushability of the vehicle.

Most of the above mentioned problems are of primary concern during free roll. The pusher and the driver are also given their share of consideration in the design. The "head first" driving position is in vogue, and is obviously precarious. For the driver, safety is vital. The rules require all sorts of safety hardware including harnesses, crash protection, proper vision, among other things, to insure the safety of the man inside. Ease of entry and exit, ride comfort, steering control, and other factors all affect the security and state of mind of the driver.

To the casual observer of the buggy scene, buggies appear to receive much more attention than they warrant. As soon as one "gets into" building a buggy, it becomes apparent that it takes an awesome amount of time and work to develop a technology which is competitive with the top buggies on campus. When the buggies roll down through Schenley Park this spring, imagine yourself confronted with the job of designing from scratch "the fastest buggy yet".



judging buggy design

The design of the racers seen every year at Spring Carnival reflects the cumulative efforts of fifty years of engineering design and innovation. New ideas are constantly being developed and refined to improve the performance of the machines on Race Day. The Sweepstakes race at Carnegie-Mellon is unlike any other competition, and so the rules governing the design of the buggies and their judging demand a whole new and unique set of criteria. The wide variety of designs found at sweepstakes is a reflection of how the factors of rolling and pushing are weighed against each other, and the judging takes this into account.

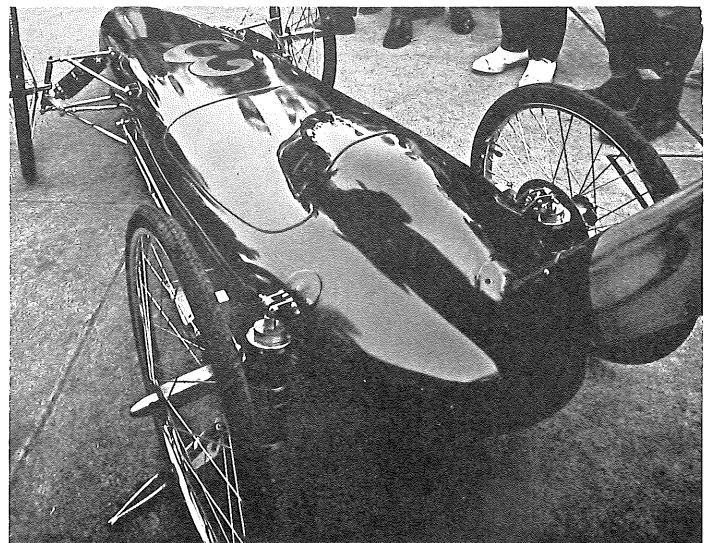
To quote the design rules, "the correctness of a mechanical system is closely related to its ability to perform in the intended environment. The design of a sweepstakes buggy, then, should be based on those parameters in the race environment." Thus, one finds buggies with the driver riding face down six inches above the road surface, not out of comfort or beauty, but out of the belief that it is the best strategy for this race.

The judges, drawn from the C-MU engineering faculty and from race car designers and drivers, award points for engineering design, construction and safety. Engineering is judged with the layout of the course in mind. The quality with which the engineering plans are carried out determines the points awarded for construction. Safety, stressed more and more in recent years, has demanded many design modifications that ensure adequate driver protection and has stimulated great ingenuity because these safety features must still allow the machine to perform well.

Here are some of the factors the judges will be looking at this year. The chassis, which ranges from buggies to bikes, must adequately and efficiently bear the load of the driver and protect him from possible roll-out or accident. The steering, so critical especially at the "chute", must be responsive, reliable, and provide good tracking to minimize energy loss. Related to the conservation of energy is the design of the suspension, which not only protects the driver, but affects the quality of the buggy's rolling, depending on how it deals with the road surface and the stresses of turning. Brakes, which must be "self-setting", that is, capable of being released and then reapplied, are judged on reliability, positioning, and manner of operation.

Much weight is given to the relationship between the driver and the buggy. The driver must be fairly comfortable, and must have easy, reliable access to all controls. The windshield must give adequate visibility without danger of fogging. In the event of a crash, the buggy must be designed to protect the driver from injury and the possibility of being trapped or thrown. And of course, the appearance of the buggy is important-its cleanliness, craftsmanship, and esthetic appeal. Nothing is quite as impressive as seeing all the buggies lined up, clean and polished, awaiting judging.

So buggy design, the product of the skill and manpower of so many people, will again be the hub of much excitement during the days surrounding Spring Carnival. The real test, however, comes on race day when the quality of design plus the ability of the push team sends the buggies over the finish line.



safety

The unexpected is always possible in the highly competitive sport of buggy. A loose bolt, a sudden glare of sunlight, one of the potholes for which the city of Pittsburgh is famous; any of these things could, and sometimes do, cause accidents.

As responsible individuals we realize that we have a duty to the buggy driver to protect him as far as possible. It was to this end that the revised safety rules of last year were developed. These rules required all buggies to have crash protection, harnesses for the driver, and a braking system that could meet the demands of an actual raceday situation. They also instituted certain safety tests that a buggy and driver were required to pass before they would be allowed to participate in any Sweepstakes activities.

Looking back, it appears that these rules did a good job covering all aspects of the race except for the hazardous situation created by passing. This has become the primary concern of the present safety committee. We feel that any buggy which has met the safety requirements already set forth is a sound piece of equipment. The driver in this instance, is the unknown factor. As a first step, a new system of allocating heats has been developed so that major contenders will not be in the same heat and, hopefully, passing will be held to a minimum. However, in the event that passing is necessary the driver must be prepared. This year all drivers that participate on raceday must successfully pass another buggy during a Sunday morning freeroll to the satisfaction of the Safety Inspector.

As the technology of buggy racing expands, safety considerations must keep pace so that buggy racing remains a safe and exciting sport.



driving a buggy

Each year at Spring Carnival an elite corps is given the privilege of a unique experience: driving a buggy. Buggy drivers are both small in size and in number. At the sight of a buggy racing at 40 or 50 miles an hour down free roll, most observers' reactions fall into one of two classes. They either react in horror, with a retort such as, "You'd never get me in one of those things," or they react with total rapture, "I wish I could drive". When a Carnegie-Mellon student has the chance to be a driver, he must be an ardent member of the latter class.

What motivates a guy to decide to become a driver? Most often it's fate: The buggies are often of limited proportions inside, and if you fit in a buggy, you're "it". The chance to encounter a unique experience, and perhaps gain a little notoriety at the same time are not to be dismissed.



Initiation into the ranks of buggy driver usually starts with a walk of the course with an experienced "pro". The general layout of the course, and the attitudes toward the team's specific course are conveyed to the neophyte. The location of every pothole must be noted, for from twelve inches above the ground at forty miles an hour a pothole is hard to spot. Not only that, it'll give you a nasty jolt and could cause you to lose control.

Free rolls only come once a week, and there's a lot of practicing to get done during the week. Pushers need to build speed and endurance, and drivers need to learn the "feel" and control of the buggy. Not only the pushers need endurance... it gets cold practicing late at night and early in the morning, and while immobilized a driver must desensitize himself to the cold and to the shocks of the road and the pushers.

Staying up to practice at night becomes a habit and when Sunday rolls around it goes from one extreme of time to another. Free rolls are held from six to eight in the morning, so to be ready the average team is up at four or five. A forty degree Sunday morning at six taxes the driver's greatest patience. But it also gives him his greatest rewards... the chance to free roll without other buggies on the course. Free rolling is exhilarating. It's quiet, with little sound but that of the wind rushing past. The sensation of free rolling is not unlike that of gliding in a sail-plane. With little noise, and perspective distorted from being only a foot above ground, there is little indication that you're travelling at forty or fifty miles an hour. The reaction of the buggy to the turn at the chute gives you an idea.

The major decision to be made during free roll is when to time the turn into the area past the monument known as the "Chute". The hairpin turn must be timed at the most advantageous moment, to send the buggy as far up into hill three as possible. A delay of too long could send the buggy rolling into Oakland. Until last year, what are known as the "back hills" (hills three, four, and five) were the greatest source of discomfort for the driver. Without the excitement of a competing buggy racing alongside, the back hills seemed painfully slow, with constant jolts from the abundant potholes. The buggy must be kept travelling straight, in order not to throw the pusher (and possibly cut off another buggy), so the driver has no recourse but to drive straight ahead and suffer the consequences. The paving of Frew

Street changed all that. It's relatively pleasant to drive the back hills now, and immensely safer.

A year's work by the buggy chairmen and five to ten weeks' practice by the push team is all culminated in the two days of Carnival when the Sweepstakes is held. Nervous tension is at its highest, the buggies are in their mechanical prime, and the pushers are psyched. The teams know weeks ahead who the competitors in their heat will be—it's up to the driver to know the driving characteristics of the other teams. Seconds before the race, the buggy is carried to the starting line. Waiting in the buggy, the driver tries to stay calm.

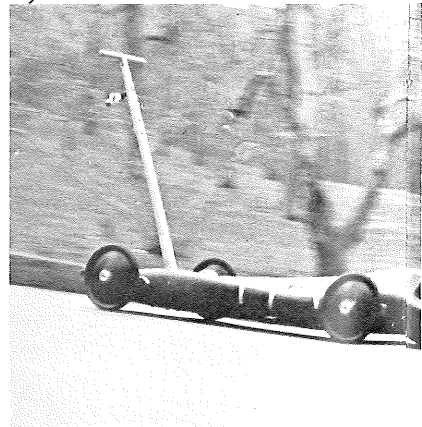
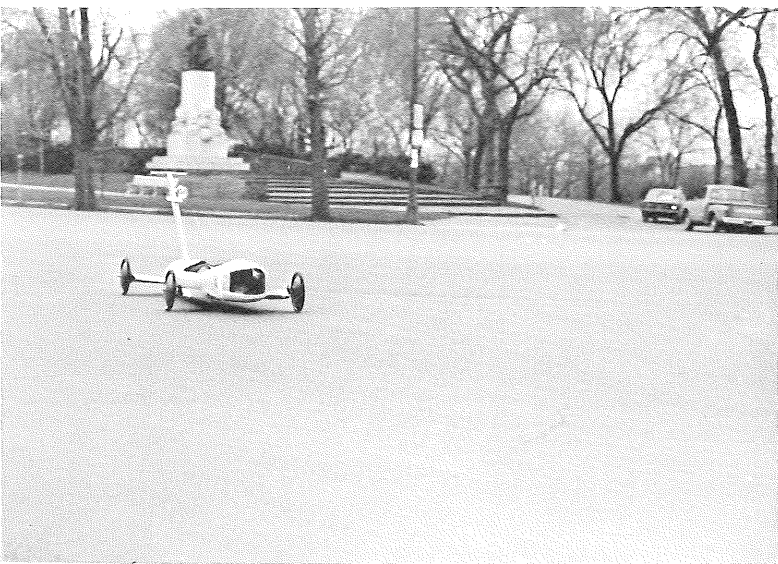
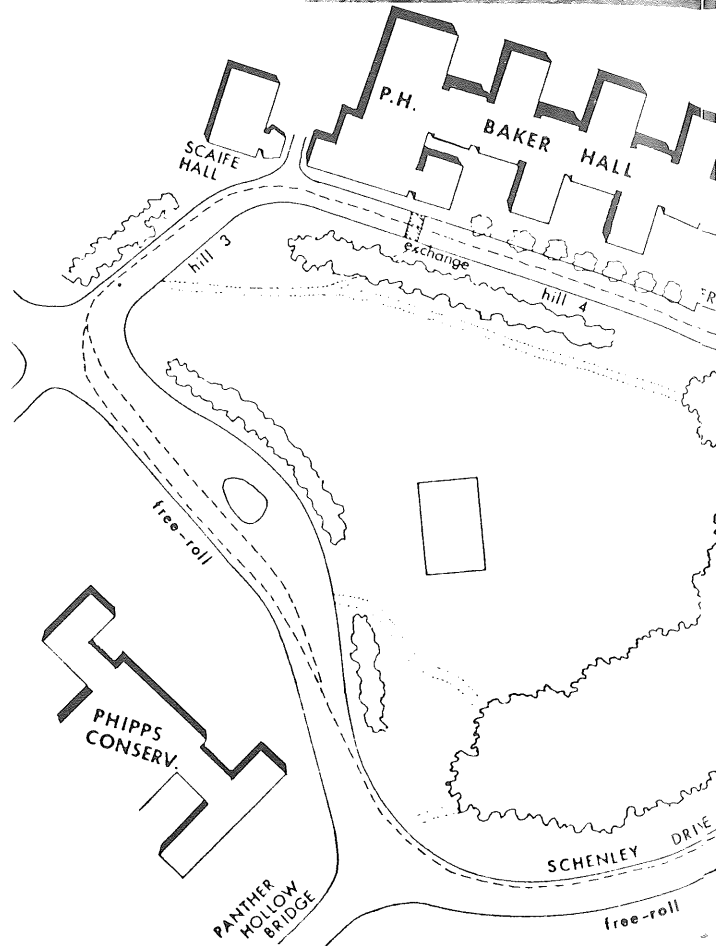
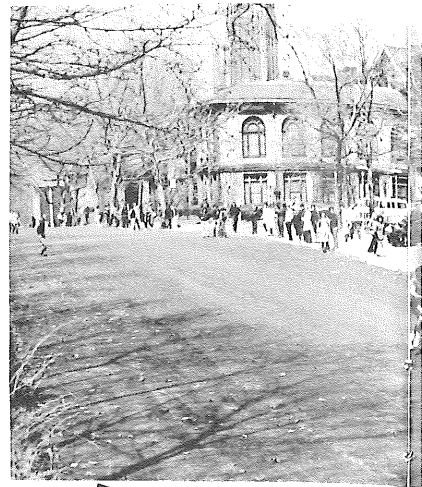
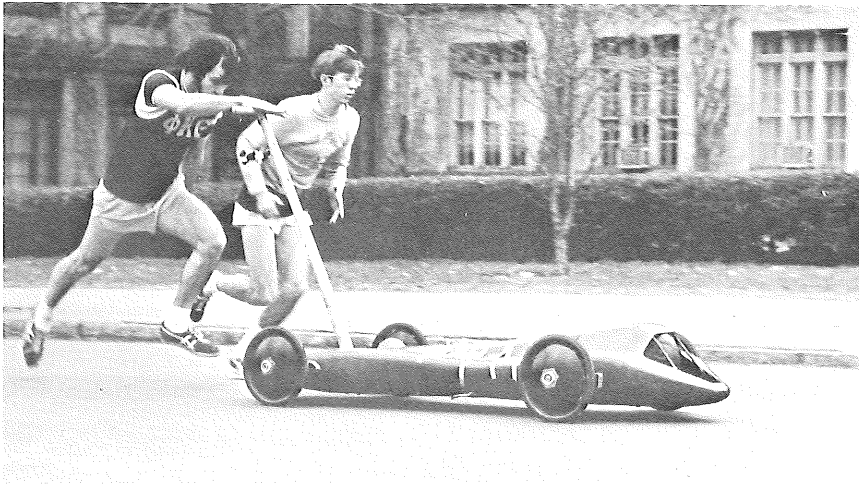
At the sound of the gun, the three buggies start up hill one. Each team has a specific lane here, and the driver must make sure he keeps his buggy in it. At the top of hill two, the driver must estimate his speed and his position relative to the other buggies. Often a buggy must cross the path of two other buggies to reach the optimum lane. This could be the crucial

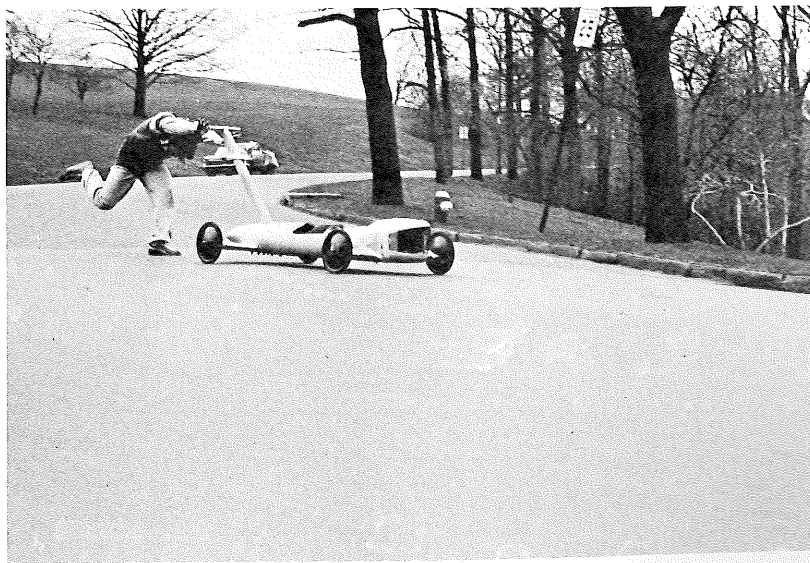
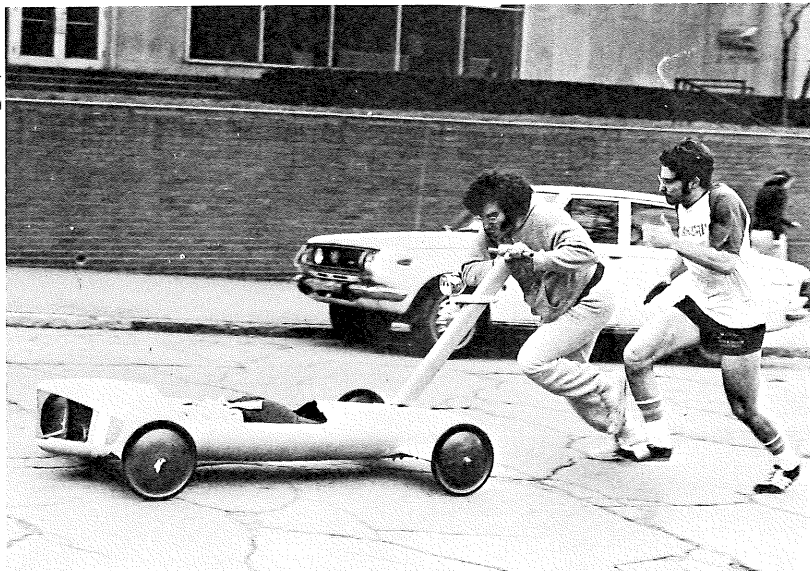
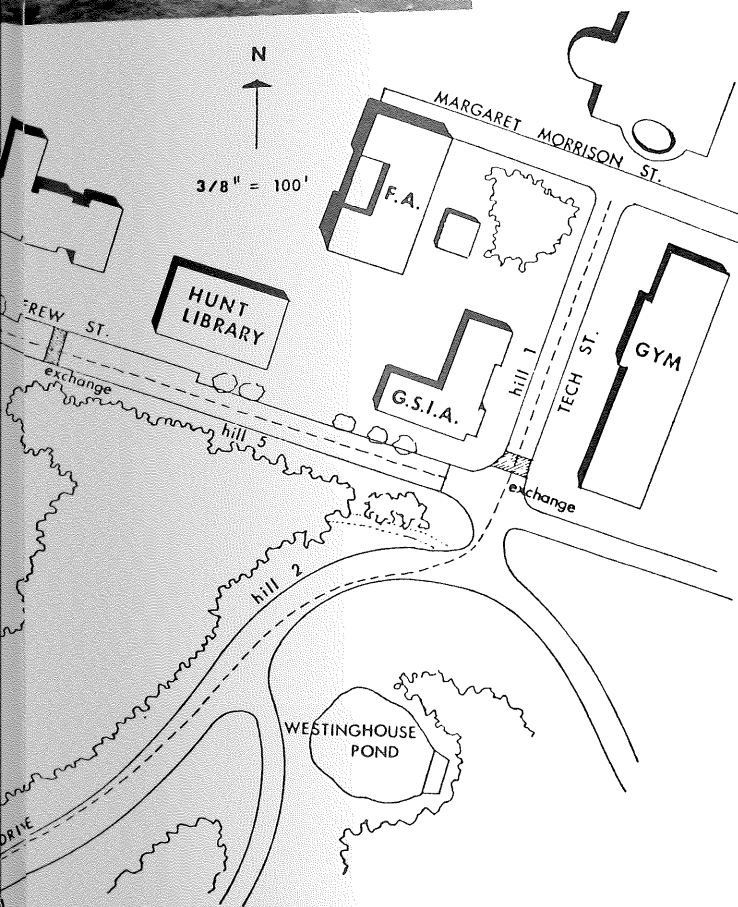
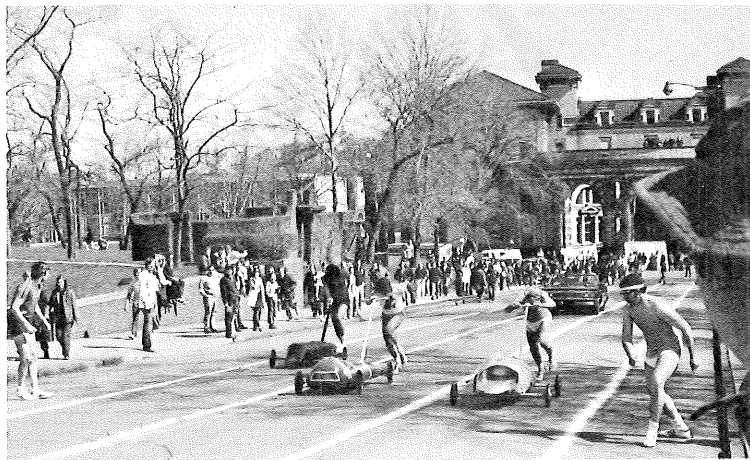
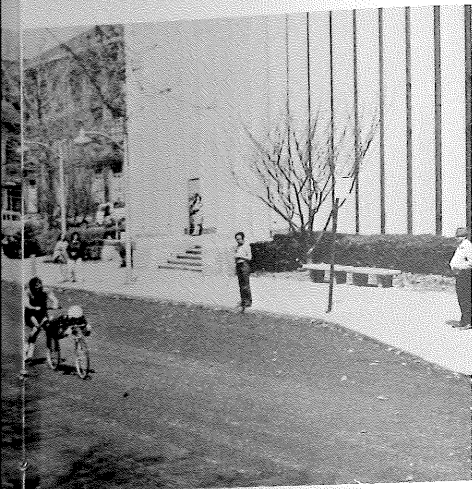
point of the race—is the buggy enough in the lead to pull over, should he stay in his lane and not try for the better lane, or must the driver let the other buggies have the lead and then remain in that order until the back hills. Constantly alert to the course and to the movements of the other buggies, the driver guides the buggy down free roll and through the chute.

The hill three pusher picks up the buggy as it enters his zone and the final race is underway. This is where lost ground can be picked up. Concentrating on keeping his course, the driver is not overly conscious of the presence of the other buggies. But the pushers are aware, and keep the buggy flying.

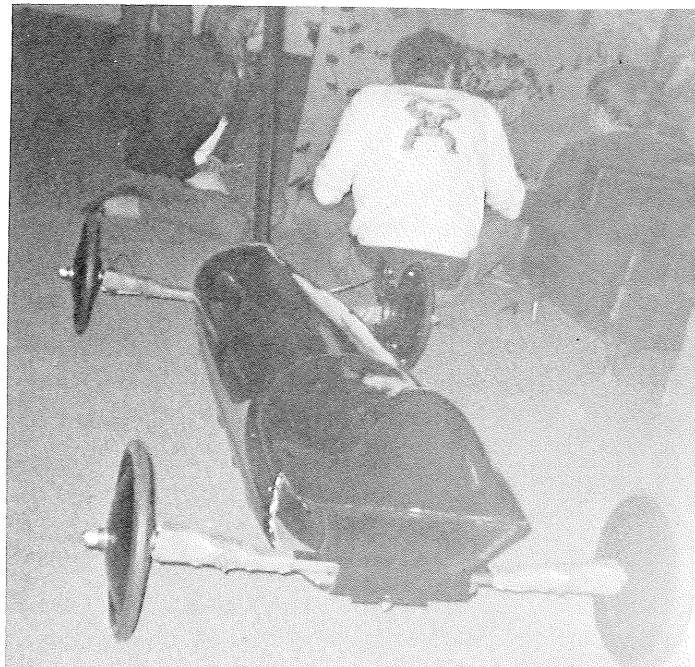
The finish line is finally crossed, and the buggy is brought to a stop. Congratulations are passed, and the driver breathes a deep sigh of relief . . . the race is over. The driver has one last task, to pass the post-race brake test. And then it's over - until next year.





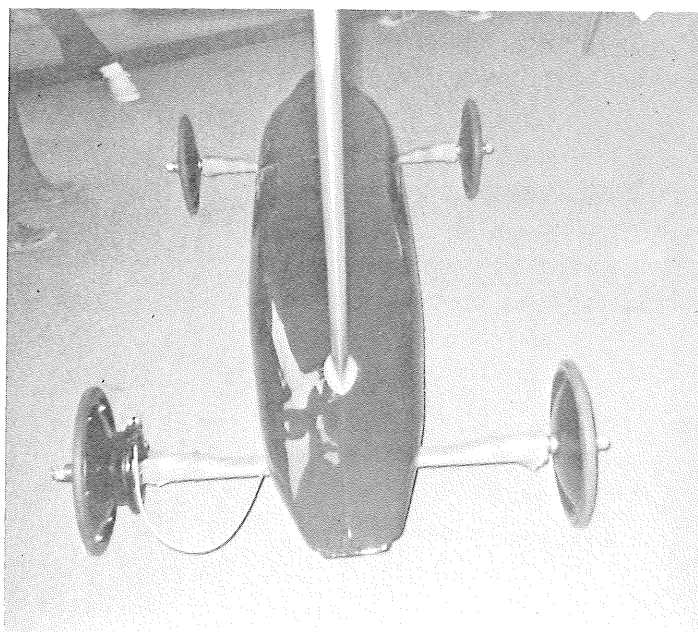


alpha tau omega



Once again the hopes of Alpha Tau Omega rest upon the wings of the "Golden Goose", a perennial contender. The Goose's record of six consecutive victories is unparalleled in Tech's buggy history. ATO's pit crew is confident that misfortunes of recent years will not recur. Rounding out the ATO fleet will be the "Worm", known to many as the "T.P.S."

Confidence in the Goose's performance is not unfounded. The buggy committee, comprised of experienced seniors and enthusiastic underclassmen, has reached a newfound height of organization. Five veterans are the nucleus for ATO's push teams, but their spots may be challenged by promising pledges. A year of experience has added depth to the drivers' knowledge. From four possible drivers, two will be selected to steer the ATO racing effort to success at this year's races.



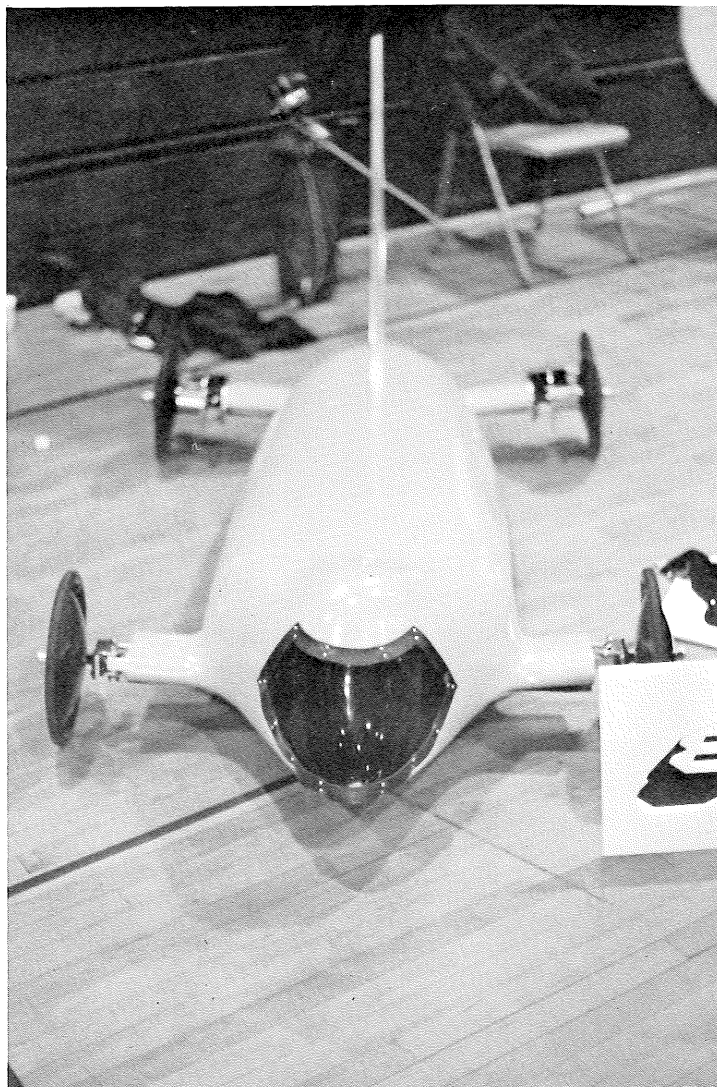
After last year's unfortunate turn of events, the Beta's will return once again this year with their eyes set on winning.

This year Beta will be racing their design winning buggy, "825", and "POS". They are both of fiberglass design with a prone driver position. Also, look for surprises out of the Beta's.

Buggy Chairman, Dary Turner, and assistant, Jim Henderson, are confident that this will be the year of the Beta. With returning pushers Harry Fennel, Wendell Miller, Jim Donnelly, George Clay, Dexter Murphy, Mike Bralkowski, Mike Niles, Jack O'Neil, and Ralph Hershberger and a bevy of promising freshmen to back them up, Beta Theta Pi has high hopes of a win.

This year will see the return of George "Crash" Wargo and the advent of two new drivers, Farrel Helfer and Bob Davis. This combination of talent will indeed contribute to an exciting set of races.

beta theta pi



cccp

mdc

The Commuter Sweepstakes's entry is a brand new innovatively designed vehicle specifically built to challenge the long held fraternity supremacy. Using advanced technology and bizarre mechanical design, backed by a well practiced push team, this Sweepstakes entry has been rated by the Tartan as "highly competitive."

This co-ed entry is backed by the vast resources of the commuters (and several former parking gates) for the sole purpose of traveling very fast, the goal of every commuter. Towards this goal the commuters have developed several dastardly techniques, all of which may be seen on Friday the 13th 1973. The standard thumb will undoubtedly be seen followed by a shapely body. Naturally all the drivers will stop to offer a lift. If this should fail what fraternity gentleman would be so impolite as to pass a lady. Besides, the oil on the curves will make it difficult.

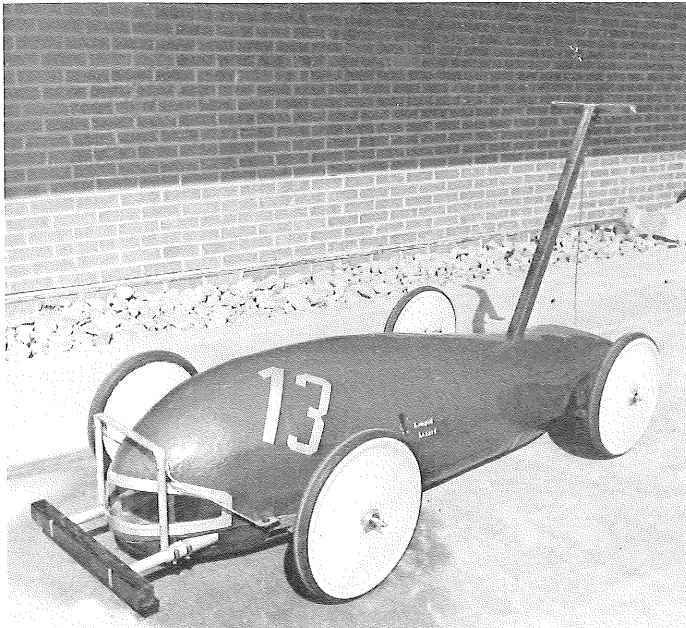
The date of the races is viewed as being partial to us, since as commuters, not much worse can happen.

May Artie not trip!

The 1973 dorm buggy is a combination of the best features of past dorm buggies. The basic frame comes from the 1964 buggy. It is a perimeter frame which is welded together out of tubular aluminum. It provides the driver with more than adequate crash protection. The unique design of the front axle assembly is the dorm's newest innovation. It was first used on last year's Sweepstakes failure. The twin outboard drum brakes used are ten inches in diameter. As an added safety feature, each brake is operated by a separate system. If one braking system fails, the driver always has the other brake available. The brake drums were ingeniously handcrafted out of frying pans, but the brakes easily pass all of the braking standards.

A respectable time could be obtained this year if an adequate push team is recruited from the dormitories. Maybe even the dorm's own long standing buggy record could be broken. But first the most significant safety feature of the buggy must be designed out-the buggy's slow speeds.

c i a



The CIA is an independent campus organization devoted to designing, building and racing buggies. It was founded in 1970 by a group of then sophomores to permit entry in the Sweepstakes competition.

The design philosophy of the CIA differs from that of many of the other entrants. New ideas and configurations are tried in an effort to find an edge over the competition. Design efforts are also made to minimize buggy weight to reduce pushing effort while still maintaining acceptable free roll performance.

The CIA's first entry, in the 1971 Sweepstakes, was a three-wheel buggy which finished ninth, a performance due in no small measure to a powerful push team. Pre-race practice and the races revealed deficiencies which led to the retirement of that buggy. Last year, a new buggy was built to explore different design concepts. This buggy, distinguished by the use of pneumatic bicycle tires, was involved in an accident on race day which negated an impressive effort by the push team.

This year finds the CIA engaged in an effort to enter two buggies in Sweepstakes competition. One buggy will be a refurbishment of last year's ill-fated entry. The second entry will be a new buggy, presently under construction. With a little luck, the buggy efforts of the CIA will reach fruition this year.

delta tau delta



Delta Tau Delta is again running its two prize-winning buggies, and readying a third to carry on the tradition. The Delts' buggy chairman, Dale Head, assisted by Bruce Alpern, has devoted his time towards readying our new buggy and making a few structural changes in our present buggies.

The "Green Grunge", driven by Rich Cassel, is our fast-rolling buggy. Constructed of fiberglass laminated over an extremely light core, it combines light weight and strength. Of unibody design (the body of the buggy is an integral part of the frame and suspension), it utilizes straight axles, internal expanding brakes, and pneumatic tires for better traction. The driver is in the prone position.

Our "Bitch II" driven by Bob Brod, is designated as our 'Design' buggy. It incorporates a honeycomb shell, with fiberglass lamination. The "Bitch II" is also of unibody construction, though it utilizes a more advanced "torsion" suspension. Generally a more advanced buggy in all respects than the "Grunge", it also rolls well.

Our third buggy, "Ralph's Wall", will embody the many advances featured in our previous buggies. Constructed of the same light material as our "Grunge", it will utilize the more sophisticated mechanical systems of the "Bitch II".

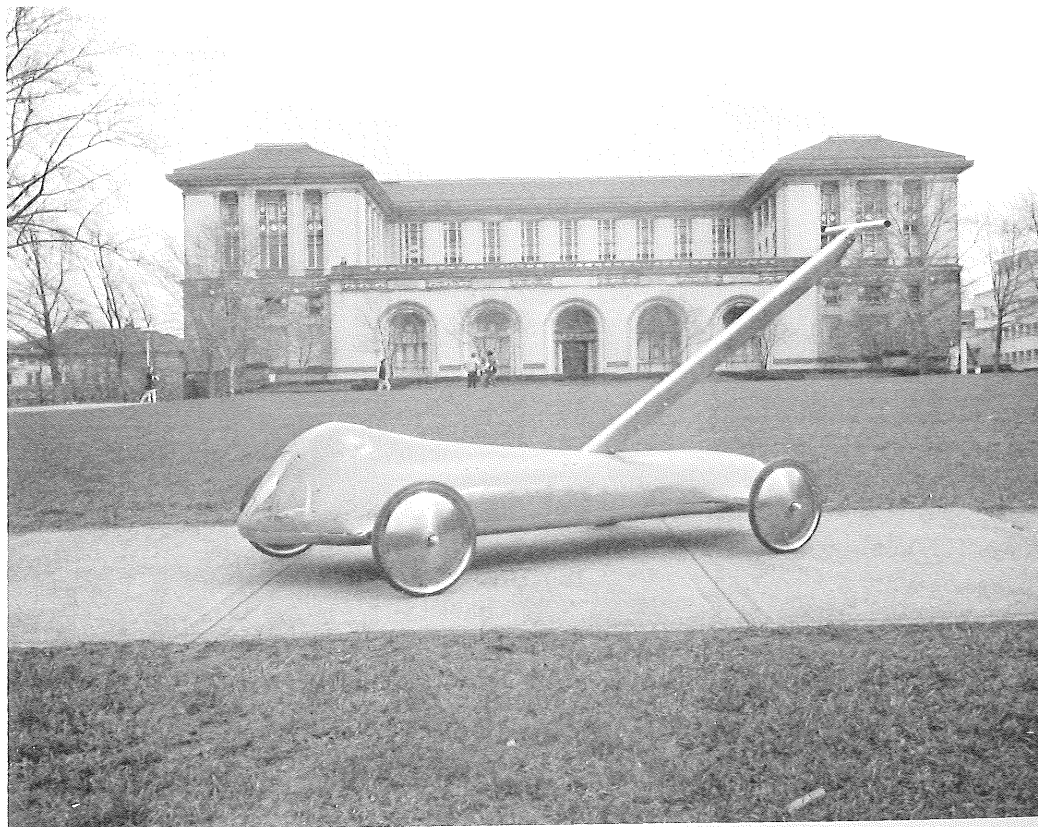
Fringe introduces its new buggy this year. This buggy will replace the old three wheeled vehicle for which Fringe has been known in the past. The new buggy has been undergoing design and construction since mid-September. A wood mock-up was constructed and several ideas and design details have been extensively worked out.

The buggy, named "Flying Buttress", was principally designed by John Lape with help from the construction crew. Through extensive use of aluminum, weight has been kept to a minimum. Body height above the ground is average, with a wide wheel stance. There are several innovative design features, the most noticable of which is the centrally located push bar. Braking is by calipers and the internal steering is a closed system.

Everyone knows the immense amount of time that goes into the creation of a new buggy. The main members of the construction crew are Richard Butcosk, John Lape, Steve Lee, Mark Finneral, Bryant Robey, and Victor Schwartz.

The push team and driver have all had several years of racing experience and look forward to the new buggy. We feel that we have acquired enough knowledge and experience to be competitive this year.

fringe



kappa sigma



This year Kappa Sigma expects to improve on its recent history in the races. Running the old "Pipe Dream III" we should be able to lower our time considerably. Hopefully introducing a move to raise the stature of Kappa Sigma in the buggy races, the buggy has been renamed the "I Forget". With this buggy as a model, we hope to recoup some of our past technology lost with our house four years ago. A frame buggy constructed primarily of tubular aluminum, it is built for speed, but with safety in mind.

Kappa Sigma should once again have an excellent push team with three members of last year's team returning and seven new pushers all trying for positions. With Frank Coletta driving, this makes a solid team for the next three years.

The Sisters of Kappa Sigma will once again be entering in the zero heat. With the experience of last year's Sweepstakes now behind them and several new sisters to add to the competition, they should show vast improvement over last year's showing.



phi kappa theta



Phi Kappa Theta's two veteran design and race buggies, "Streak" and "Snorpus," will again appear in the Sweepstakes. "Streak", last year's winning buggy, was designed in the Fall of 1969 and in three years has collected two Sweepstakes trophies. "Streak" has also captured a first place and a second place design trophy in its three year history.

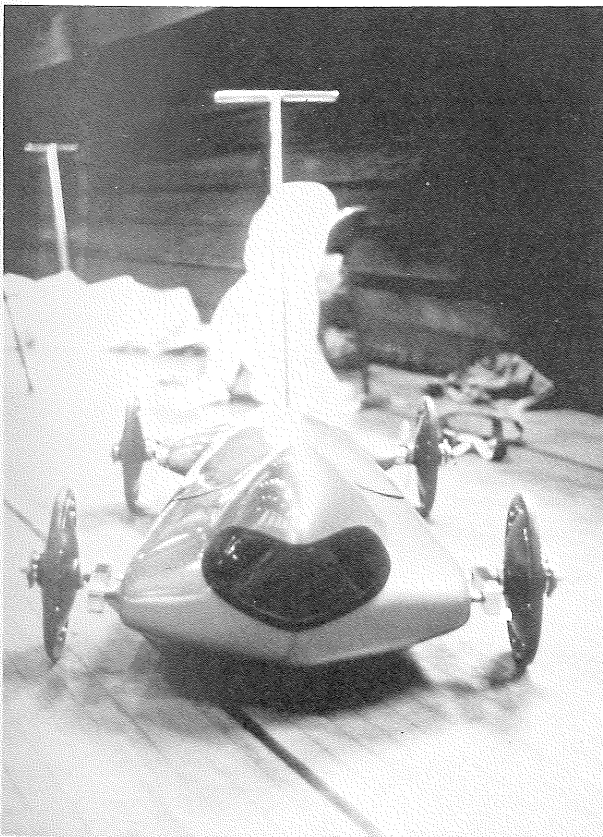
"Streak" is built with a combination of lightness and sophistication. Some of its features are high driver safety, four wheel independent suspension, hydraulic disc brakes for fast stops, and monocoque fiberglass shell with a wind-cheating Kamm-tail. Several detail improvements and technical innovations have been made this year in "Streak" to increase speed and to solidify its position as the top race and design buggy.

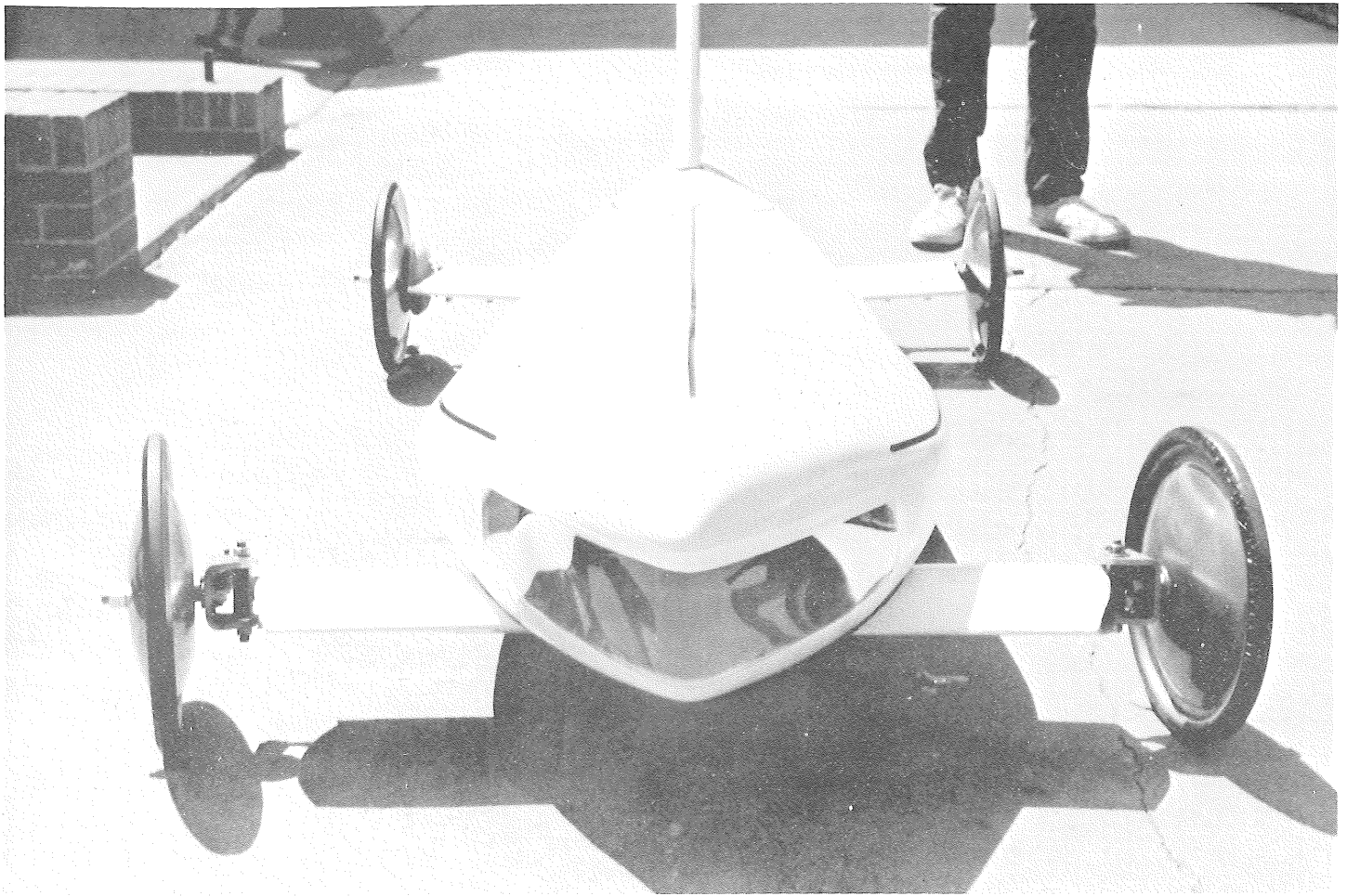
"Snorpus" was third place design winner last year, climaxing a decade of design trophies. "Snorpus" also has had many changes to increase speed and improve its chances for another design trophy. Featuring four wheel independent suspension, disc brakes, and a monocoque fiberglass body, "Snorpus" will return for its eleventh Sweepstakes race and design competition this Spring.

Four of last year's winning push team return this year, led by Steve Williams and Lee Dubuc. Other "A" team members include Ernie Legg and Mike Smith who will both be pushing for the third straight year.

Returning "B" team members are Steve Baker, Dan Streyle, and last year's eleventh hour "A" team replacement, Mike Pechnyo. Evan Hutchison, Ken Forbrich and Roger Peck are the returning buggy drivers.

Design innovations and new technical features have always been a part of the Phi Kap buggy tradition. New chairmen Don Marburger and Evan Hutchison hope to keep this high tradition in the 1973 Sweepstakes.





pi kappa alpha

Throughout the entire history of Pi Kappa Alpha on this campus, the Sweepstakes races have become an ingrained tradition with us. The result is that Pi Kappa Alpha is a major contender in the races almost every year.

The organization this year is headed by the buggy chairman Vic Rogers and is assisted by Jay Simmons and other capable Pikas. The push team is trained by Bary Benjamin.

Pika is hoping to do well this year with most of last year's team returning. The buggies themselves are not the whole race but they are a major part. The "Pi-thon" will be running in the A-team slot this year, with the "Tiger Shark II" still competitive as a B-buggy. The "Tiger Shark II" is the present course record holder with a 2:20.9 total time.

With the back hills paved last year and a chance for hill one to be paved this year, there is a good chance that the record will be broken. We hope that we will be the ones to do it.

Yes, fans, SAE is back again this year for another Sweepstakes trophy. Our prize-winning bike, a new buggy, and an unusually strong push team mark 1973 as a big year for SAE.

In '72 SAE moved into the higher performance world of four-wheelers with "2024", an advanced all-aluminum buggy. This year, another buggy, "Intrepid", makes its racing debut. Relying on simplicity and additional knowledge to insure performance, "Intrepid" is hoped to enhance SAE's competitiveness through faster free rolls and increased participation.

Our highly-successful two-wheelers will also be running this year. Holding the impressive record of finishing in the "top six" for 11 of the past 13 races, the bikes will be competing with the buggy for selection as SAE's "A" team vehicle.

Providing the muscles this year are 8 veteran pushers, with numerous recruits trying out for both teams. Two enthusiastic new drivers will pilot SAE's vehicles to another big Sweepstakes victory in '73.

sigma

alpha

epsilon

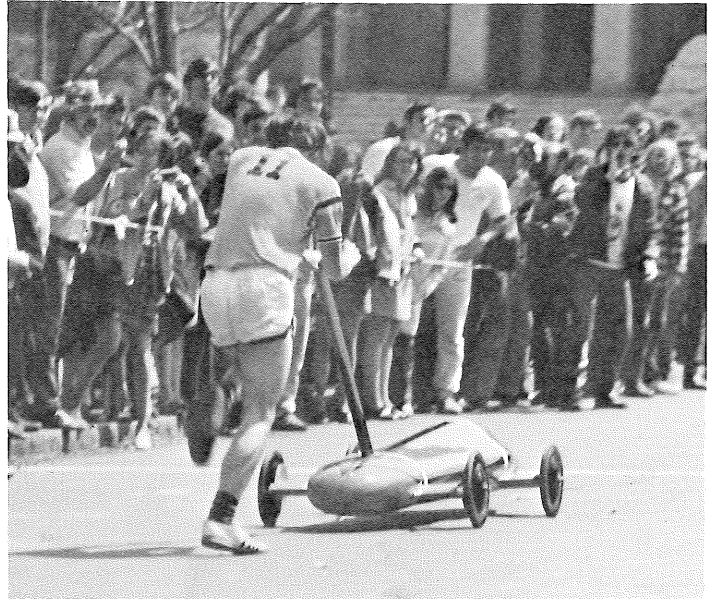


Sigma Nu has always prided itself in the fact that its buggy has always had a good showing. Fast race times and remarkable design have been characteristic of the entries, but as luck has had it, disqualifications have thwarted previous attempts to obtain the coveted first place trophy.

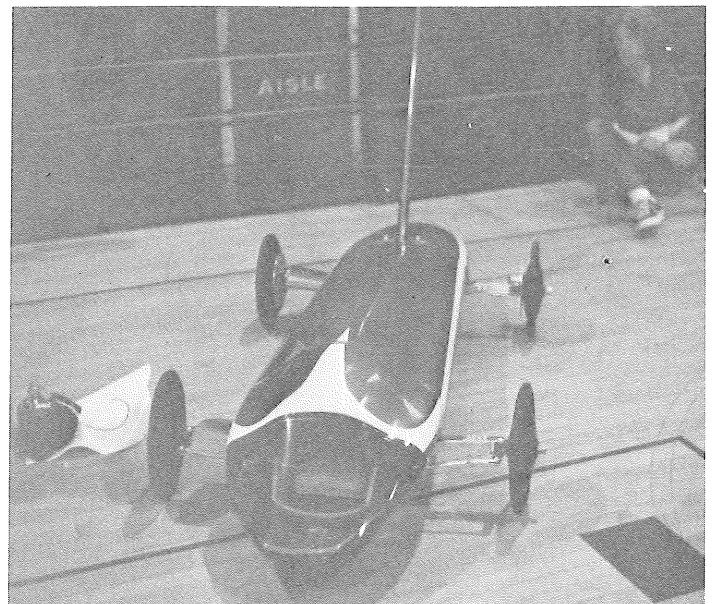
Most buggy enthusiasts will recall the "Lizard", an exemplary design winning buggy. The "Lizard" was then followed by the "Aires," alias "Tom Slick". This buggy catapulted hopes with its third place finish, and the following year a new generation of buggies made their appearance.

The two nearly identical buggies, "Brother Rat" and "Hornet" have championed the cause ever since. The "Hornet" undeniably the faster of the two, has performed commendably in the past five years. It has placed repeatedly in the top three, but fate decreed that its performance should not be acknowledged because of persistent mechanical failures until last year's third place win.

Sigma Nu has high expectations this year. Their push teams are strong and confident. The buggies are in prime condition. All sights are set on winning the Sweepstakes first place trophy.



sigma nu

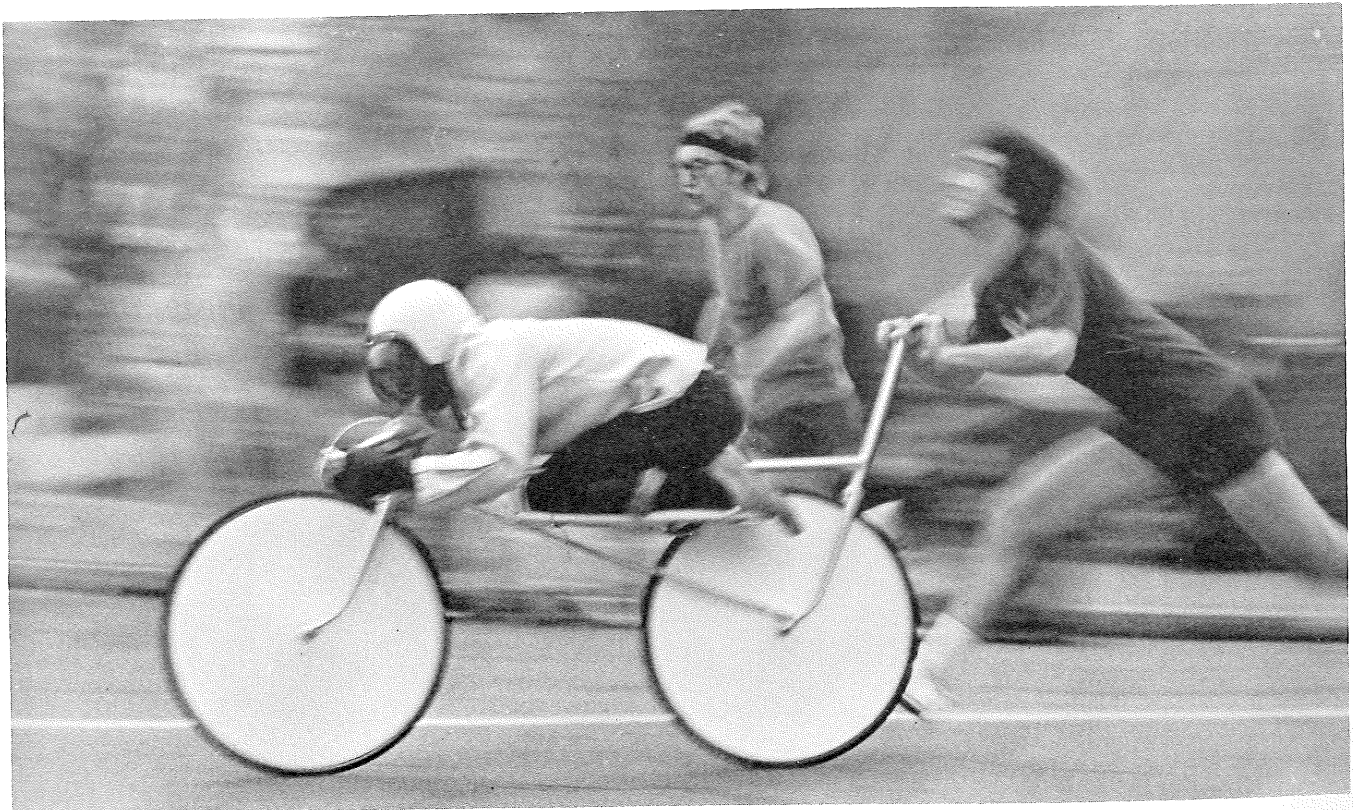


Tau Delta Phi, with a fanaticism for an optimal balance between safety and speed, again this year will enter two light weight buggies of bicycle design, each completely equipped with specially contrived wheels and covers, caliper hand brakes, a driver with a spotless safety record, and an experienced push team.

Chosen for its weight advantage and quick cornering ability, the bicycle design, which, contradictory to the mythical rules of buggy secrets, openly displays every feature, should prove once again this year to stand wheels and handlebars above the other competing buggies. The "A" bike, the P.W. No. 13 Le "D", wrought with a tubular aluminum frame, weighs merely 12¾ pounds, undoubtedly the lightest vehicle in the race. The "D.B. Super Male Chauvinist Mark VII", built with a heavier steel frame weighing 29 5/8 pounds, is the "B" bike. On each bike, the driver is perched on padded supports and rides in the jockey position to cut wind resistance and provide optimal visibility. Also, each driver wears a protective helmet, wind mask, and leather jacket as a safety precaution.

Under the direction of chairmen Neil Helfand and Kirk Usnick and with a special training program implemented by Frank Lefkin for the push teams, Tau Delta Phi expects to better its trophy winning performance of last year with the first place trophy this year.

tau delta phi



sweepstakes heats

Preliminaries

*Heat 0 - 1) Phi Kappa Theta Alumni
2) Pi Kappa Alpha Alumni
3) Kappa Sigma Sisters*

*Heat 1 - 1)
2) Delta Tau Delta - B
3) Sigma Alpha Epsilon - B*

*Heat 2 - 1) Alpha Tau Omega - B
2) Phi Kappa Theta - B
3) Sigma Nu - A*

*Heat 3 - 1) Delta Tau Delta - A
2) Kappa Sigma
3) Sigma Alpha Epsilon - A*

*Heat 4 - 1) Tau Delta Phi - A
2) C.C.C.P.
3) Pi Kappa Alpha - A*

*Heat 5 - 1) C.I.A. - B
2) Sigma Nu - B
3) Alpha Tau Omega - A*

*Heat 6 - 1) M.D.C.
2) Fringe
3) Beta Theta Pi - B*

*Heat 7 - 1)
2) C.I.A. - A
3) Phi Kappa Theta - A*

*Heat 8 - 1) Tau Delta Phi - B
2) Pi Kappa Alpha - B
3) Beta Theta Pi - A*

Finals