Tools for Life

by
George Roman Babiak
and
Karen Overton

A START-UP GUIDE FOR YOUTH RECYCLING & BICYCLING PROGRAMS

A Publication of Transportation Alternatives,
New York City

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The Authors


GRB

Karen Overton

was born in Arlington, Massachusetts but spent her childhood in the Syracuse area of New York State. Karen has a life-long interest in the Third World that began when she was a high school exchange student in Brazil. She has an undergraduate degree in Latin American and Carib- bean studies and a Masters degree in Urban and Regional Planning. Both degrees were realized at The State University of New York at Albany. Karen lived in Mozambique for one year as the director of Bikes for Africa, a program of the Institute for Transportation and Development Policy. After returning to the U.S. she settled in New York City and became a staff member of Transportation Alternatives. Since moving away from home, Karen's primary mode of transportation has been the bicycle.

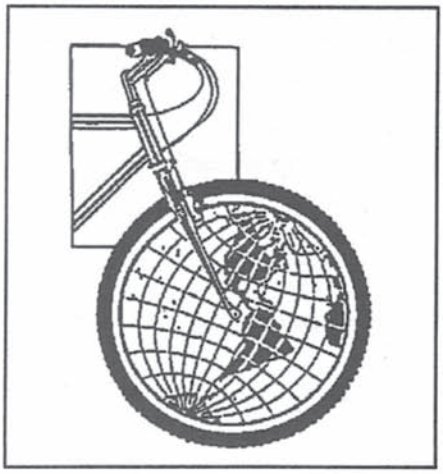

VANESSA VALDES

George Roman Babiak

is a former actor, comedy improviser, and screenwriter. To pay for those careers, he has also been a plumber/carpenter/electrician, a sneaker salesman, a movie theater manager, a desktop publisher, a teacher, and a bicycle mechanic. Each and every one of the above skills has been utilized in his position as the first Instructor/Head Mechanic ofRecycle-A- Bicycle. He is also a native Manhattanite and a graduate of Hunter College. Since his parents moved away from home, George's primary mode of transportation has been the bicycle.

Transportation Alternatives

Founded in 1973, Transportation Alternatives is a 4,000 member citizens' group working for better bicycle transportation, pedestrians' rights and auto-reduction strategies in New York City and the metropolitan area. Their aim is to create a more just and livable city that sets an example for other communities in America and around the world. Transportation Alternatives has always been bicycling-oriented and their agenda has broadened - helping people and communities become less dependent on cars, maintaining a grassroots connection to environmental issues and enhancing neighborhoods and civic life.



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THE CITY OF NEW YORK
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RUTH W. MESSINGER
BOROUGH PRESIDENT

I am proud to have worked closely with Transportation Alternatives to make our shared vision a reality: turning trashed or abandoned bicycles into an opportunity for learning and environmental improvement.

"Recycle-A-Bicycle" is precisely the type of project needed to help our city's youth and the environment. Students learn how to repair and maintain bicycles, how to ride safely, and how to help clean up the environment by repairing and reusing discarded bikes. They also experience the value and rewards of work and contributing to their community.

Participating students have the opportunity to earn their own bicycle through per- forming extra repair work on discarded bicycles, which can then be distributed to interested community organizations. By putting thrown-away bicycles back on the road, the students in the program do all of us a service: preventing waste and providing a non-polluting form of transportation.

I have been consistently impressed with the program's accomplishments. I am proud that with funds I provided. Transportation Alternatives with the Children's Aid Society established the first "Recycle-A-Bicycle" program at Intermediate School 218 in Washington Heights in 1994. I have continued to support the operation and expansion of this innovative program to P.S. 109 in East Harlem, Eastern District High School in Williamsburg and the Park Slope Mini-School.

This guide is the next step toward helping the "Recycle-A-Bicycle" program grow. I hope to see more such programs launched in New York City and anywhere there are young people, junked bikes, and the desire to learn.

Ruth W. Messinger

Introduction

Have you ever walked along a New York City street on garbage night? If you haven't, it's like going to a flea market. It's a bit less organized and you might need to sift through some real garbage to find a treasure, but the point is that many good things are needlessly thrown away. It is, after all, an unfortunate side-effect of the American way. Our economic system encourages us to consume. Consequently, furniture, clothes, appliances, and bicycles are all heaved onto the sidewalk because they are cheaper to replace than to fix. Sharp-eyed scavengers can always find good bargains on the street but the majority of these items are not salvaged. Most end up in landfills, which are already overfilled and suffer from leaching and toxic material runoff. Our excessive consumption is not only wasteful, it is endangering our environment.

Almost an Antique. *This Stingray, swept aside by the tides of fashion, is ready to roll again.*

Have you ever walked into a classroom where the students are excited about their work? If you haven't, it's because educators face greater obstacles than ever before. Young minds are barraged by negative influences, but teachers are expected to maintain high expectations for performance and create meaningful experiences that build skills and values. Violence is rampant in many areas, but teachers are expected to create a safe learning environment for children that demands respect and tolerance for people different than themselves. Lastly, teachers are expected to involve families and communities, the very same ones that are growing ever more splintered. There are educators today who are developing and teaching curricula that offer hands-on activities relevant to our times, but many classrooms are falling short in one or more of these areas.

What is the connection between the two seemingly unrelated social issues of waste management and education? **Transportation Alternatives** (TA) believes that it is the bicycle. In 1994, TA inaugurated its youth environmental education program, Recycle-A-Bicycle, to make this connection a reality. In the workshop/classroom, **Recycle-A-Bicycle** ("RAB" from here on in) examines real environmental problems, teaches the technical skills needed to help solve them, and offers concrete rewards to the participants.

WANDA ANDERSON, 9TH GRADE, P.S. 218

The meaning of RAB varies to different people. If you ask the students, it is simply fun. If you ask the instructors, it is both environmental education and direct action. If you ask the parents of the students, RAB's best gift to them is a metaphorical set of "tools for life."

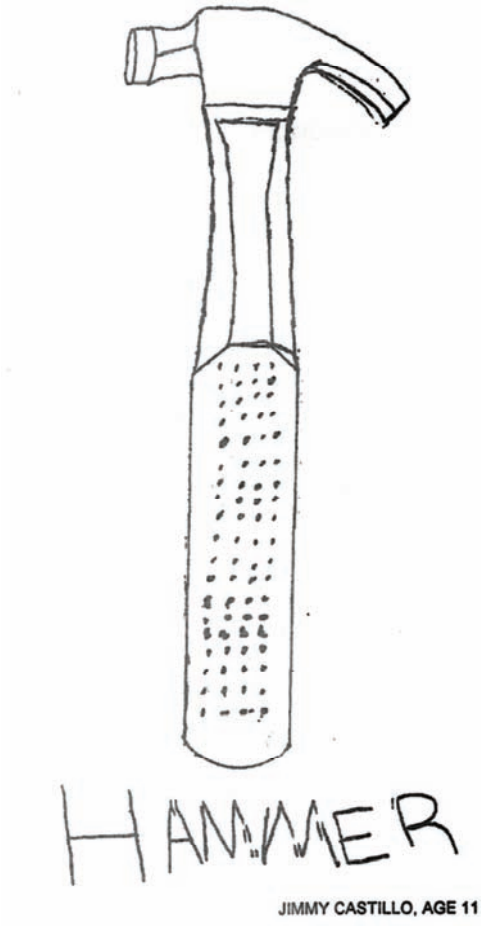
In the short time since its inception, TA. has received many requests for information about RAB. Rather than see other groups try to "reinvent the wheel," TA decided to put together this manual. We hope it will en- courage the emergence of RAB-like programs across the United States. With each new youth bicycle recycling program, greater numbers of youth will receive an environmental education that directly increases their activism. This will result in an educated population that will assume leadership on environmental issues in

future years. Along the way, we also want to attract the support of parents and other members of the community who might not otherwise find time for environmental concerns.

Intermediate School 218

Recycle-A-Bicycle: The New York Model

RAB is not the first program of its kind. There are at least 20 organizations scattered across North America that collect used bicycles, teach youths how to repair them, and put them back into the community (see Resource Directory for a list of them). What makes RAB special is its size,-it's the largest in the U.S., as far as we know-its scope, and the fact that we work in the public school system. As of December, 1995, RAB has four active sites in the New York City area and is on the verge of opening a fifth. We've been fortunate enough to receive start-up and support funds from groups as disparate as the **Office of the Manhattan Borough President** (Ruth Messinger), the New York City Department of Sanitation, **The Children's Aid Society, Liz Claiborne Inc**., and many more (see appendix).



JIMMY CASTILLO, AGE 11

Washington Heights

The first and largest of our sites was inaugurated in May of 1994 at **Intermediate School 218**, a new facility in Washington Heights, an area in the north end of Manhattan populated mainly by immigrants from the Dominican Republic. I.S. 218 (also known as **Salome Urena de Henriquez**) is a "Community School," i.e., a project run in tandem by the **New York City Board of Education** and the Children's Aid Society. Its mission is to be more than a school: it was designed as a center around which the community (one of the densest in Manhattan) can revolve. An example of I.S. 218's greater vision of service is the on-premises medical clinic that provides students with regular check-ups.

The school's highest priority after education is keeping kids off the streets. It does this by providing extensive after-school and summertime programs. The innovative nature of I.S. 218, the enthusiasm of its staff, the presence of C.A.S., and the existence of a viable shop facility all helped make it an ideal place for our pilot project.

At the time of this writing, there are 102 kids in 6 RAB classes at I.S. 218. The total number of kids trained in 1995 is 242. The ages range from 10 to 13, but RAB has had teen-age volunteers since the beginning. Some of these have come from the Washington Heights area, while other teens have come from City as School, a special NYC-run high school that places at-risk students in actual work environments rather than class- rooms. In the past year, I.S. 218 had 7 such "interns" from City As School.

In 1995, I.S. 218 collected 398 bikes and recycled 277 of them. Some were sold or given away to other institutions; others were distributed through our Eam-A-Bike program (more about that later on).

East Harlem

Our second site. **Public School 109** in East Harlem, was first conceived when **Larry Held**, a teacher at the school heard about RAB. He immediately became a TA member and approached the school's principal, **Ms. Iraida Hada,** about starting a branch there. RAB at P.S. 109 was designed from the onset to be a project on a smaller scale. The school had a spare classroom to devote to RAB, but the students were much younger (7 to 10 years) and the facilities did not lend themselves to the extensive recycling done at I.S. 218. Nevertheless, East Harlem has been a definite success. By December of 1995, 73 students of the school had taken the course, and 42 bicycles were recycled.

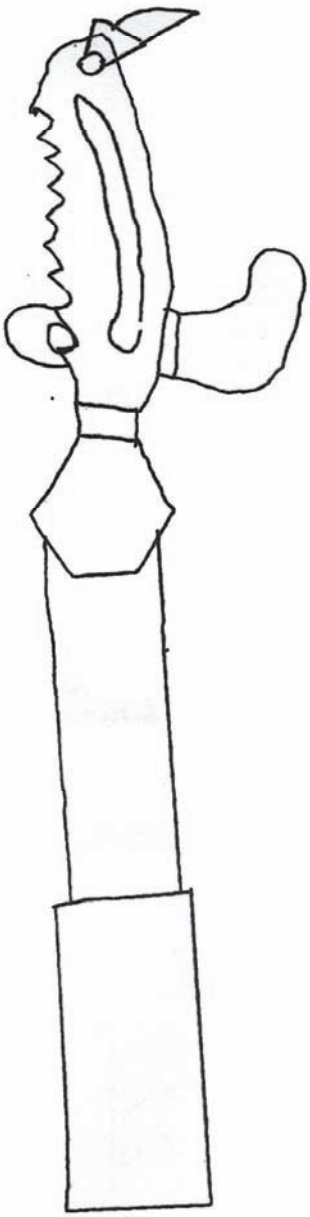
Brooklyn 1 (Williamsburgh)

In early 1995, **Ira Perelson**, a teacher at **Eastern District High School,** visited I.S. 218 with a group of teens from his school. They had come to pick up a handful of bikes that RAB was donating to their local **Outward Bound** chapter. When Ira's students saw children much smaller than themselves busily working away in a fully outfitted shop, they asked him if it were possible for them to have one, too. Struck by their interest Ira knew he had stumbled onto something. In the next few weeks he single-handedly raised $200 to purchase a stripped-down set of bicycle tools and began an after-school project in a basement room that was formerly devoted to automotive repair (to diehard T.A. members, that's progress!). Since the inception of this project, RAB director Karen Overton has helped raise an additional $1500 from **Bike-Aid**, a college-level student organization that generates funds by bike touring. Ira also raised another $500 from the NYC school board fund and $100 from the **Tannen Family Foundation**.

Approximately 25 students have been involved in the Williamsburgh RAB to date, all of them teen-agers. For a time, the tools had to be passed from hand to hand, but the spirit was always joyful. The group is the only one among RAB's sites that sponsors organized rides. In many cases, the final destination of the ride is a community service project.

Brooklyn 2 (Park Slope)

The smallest of our projects is housed in the **Park Slope Mini-School**. It is unique among our sites because of the nature of its kids: they are all Special Education students. It's an after-school program built by **Vince Canziani**, who is the director of the Mini-School and also works with **Good Shepherd Services,** and TA member **Richard Cusimano**, who serves as a volunteer instructor/mechanic. It began in the Fall of 1995 with a start-up grant of $500 awarded by the **Park Slope Civic Council**. It's held twice a week and there are currently 12 students enrolled in the program. The kids range from 11 to 14 years of age, and are all emotionally handicapped. By January of 1996, they collected 24 bikes. The school has also been given a $500 grant by the NYC Board of Education to support a bicycle business as an experiential learning program.



"FRAME AND FORK STRAIGHTENING TOOL"
BY JUAN ALVARADO, AGE 11

Vince Canziani and Ian adjust a derailleur.

At the present time, we have just been awarded funds by cosmetic maker Liz Claiborne for a fifth RAB location. The focus of this latest venture will be to develop entrepreneurial skills in teens through the recycling of bikes. TA is currently shopping for a new partner organization with which to begin this new site.

Each of our active RAB sites serves a different population and age group. Each also represents our project at a different level of development. The funding ranges from ample to non-existent, but all four have succeeded in what they hoped to accomplish, and all four continue to grow. Throughout this report we will refer to examples drawn from I.S. 218 and its sister projects in the hope that you will find parallels to your own situation.

Laying the Foundation

Where are you coming from?


KAREN OVERTON

They Recycle to Dance. Members of the Pinelands project in Barbados

The original goal of Transportation Alternatives was to promote cycling as a practical form of transportation, a mission that has its roots in the environmental movement. We've found that people starting RAB-style projects have come from a variety of backgrounds. Some are teachers, others are long-time bicycle aficionados and/or mechanics. A few come from the field of job training. There are even projects that focus on the entrepreneurial aspect of bicycle recycling. (A notable example of this is the **Pinelands Creative Workshop** in Barbados, which funds a traditional Caribbean dance company with a used bike shop.)

Whatever your origins, the project you create will probably incorporate aspects from all these realms. Be prepared to do some learning. You may be a top-notch mechanic, but you'll want to know how to write a lesson plan or a written exam. Your strengths may lie in fund-raising, but at some point you'll need to know what to do when someone says, "Pass me the hook spanner."

The Components of a Project

Sure, you can just run out and start pulling bicycles out of dumpsters, but you'll be much better off if you set up the basic framework of your program first. We've identified nine major components that are vital to a Recycling/Cycling youth program. These are:

1. Project Definition
2. Organizational Structure
3. Staffing
4. Workshop and Storage space
5. The Bicycle Collection Network
6. Curriculum
7. Public Relations
8. Paying the Bills
9. Safety, Quality Control, and Liability

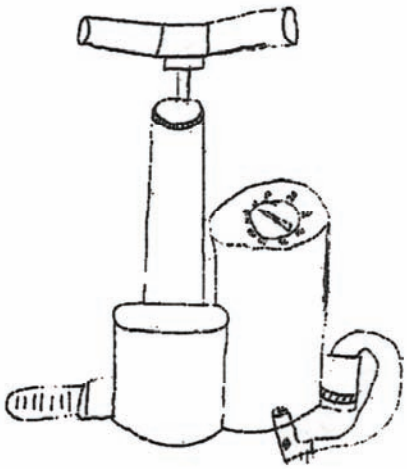
While there is no specific order in which to address each of these

components, each one is equally important to the success of your project. They should be in place before start-up or at least be included in your eventual master plan.
Remember that your situation will always be unique. No two projects are alike. The planning process takes time and is organic by nature. The fact that there are so many variations on the Recycle-A-Bicycle model is a tribute to its flexibility. As you evaluate your program's needs, take full license to modify the model we offer. Just be sure to nail down your approach before you begin. If nothing else, careful planning will reassure your supporters and partners.

I. Project Definition

Start by clearly defining the goals of your project. The beauty of bicycle education projects is the versatility of the concept. Depending on the ultimate mission of your organization, your project may focus its attention on one or more of the following areas:

- Recycling
- Youth training in bike repair
- Safety education
- Community service
- Small business training
- Environmental studies
- Youth leadership development
- Recreational activities



"PUMP" BY JUAN ALVARADO, AGE 11

It's easy enough to set a goal. A much harder task is to measure your progress toward it. Once you've determined the direction, or **strategy** of your project, identify the **objectives** by which to evaluate your performance and determine the project's success. It's important for donors and members, as well as project staff, to have concrete evidence on which to base criticism and plan improvement.

Here's an example of how this works in reality: A goal may be set which states that children receive training in mechanics and develop their capacity to diagnose and solve problems. The strategy is to offer a course in bike repair and maintenance; the objectives are to a) train sixty 8th graders in this course for the school year, and b) repair 180 bicycles in the classes.

Another goal may be for a group of children to receive an education in business. The strategy is to simulate a retail bike shop in class. The objectives are to a) have a class of twenty 8th graders devise a business plan, b) open and operate the shop throughout the year, and c) sell 100 bikes. The opportunities for variation are tremendous! A word of caution: start small. Choose one goal and work to achieve it. In this way you remain focused and gain the confidence and support of those around you. Once this happens you are in the best position to develop and take on new goals.

II. Organizational Structure

Going it alone

Most existing bicycle education projects are housed under not-for-profit organizations. RAB was conceived from within Transportation Alternatives, a larger organization that has been in existence for over two decades. As the project came to life, we added to our organizational recipe by forming a new partnership with the Children's Aid Society. Later on, we formed more alliances with NYC schools to start our other sites. The cooperation and support of other groups and individuals is what made RAB's rapid growth possible.

You, however, may decide that your project should be self-contained. This may be the way to go for an individual or a small group with limited time and resources.

It might begin as a class for the neighborhood. With a basic tool box and a few kids who own bikes, you can begin a repair class at a playground or in someone's garage. If there is space, you can collect unwanted bikes and work with kids who want to fix them up for themselves. Once everyone has a safe bike, you may begin organizing group rides. These activities are spontaneous and generally reflect the skills and amount of time that the organizers have available.

At some point, you might want to expand beyond the neighborhood. The word will get out and other people will be interested in bringing your program to their kids. The garage and the toolbox are no longer enough. How best to grow?

Remaining independent is very attractive. You call the shots; you select the kids; you determine the goals. There are some drawbacks, however. Acquiring not-for-profit status for a new organization is a long and intricate process. Among other things, you need to have a Board of Directors who are obligated to be financially responsible for your group.

There is also the question of credibility. If you stay a lone wolf, it can take some time before you convince potential donors (not to mention a community) of the integrity and worth of your program.

Some projects have succeeded in this. **The Bicycle Action Project** in Indianapolis got its start when the founder, Charles Hammond, noticed some discarded bikes in front of a house. He approached the woman who lived inside, told her that he'd like to fix up the bikes for kids and before he knew it, found himself the subject of a newspaper article. Thrust into the position of a project director, he rose to the occasion and created BAP. Today the project (one of the oldest in the country) is an independent not-for-profit organization with its own board of directors.

If you want to go it alone, a number of books in our bibliography can provide you with the details of founding a not-for-profit organization.

Alliances with other Organizations

There is another way to make the leap into official status:

approach a group whose mission incorporates the goals of a bicycle education project. An existing organization has a structure in place that you may tap into to expedite the start-up process. Their help may enable you to do things like advertise the program, cover the costs of liability, and give tax exemptions to people who make donations. An organization may be convinced to dedicate resources towards the formulation of the project's design and implementation. They may also devote staff time or recruit volunteers from its membership base. Even the use of a photocopy machine can be a substantial contribution.

The staff of an organization may also offer valuable skills that are lacking in your own operation. Word processing, desktop publishing, illustration, public relations, and photography are all talents that may be available through your parent or partner group.

Organizations offer a framework through which administration, program development, implementation, and financial support are offered. Bike education projects may be housed in community-based organizations, youth service organizations, churches, schools, bicycle clubs and advocacy groups. Some projects choose to remain small while others become incorporated as a not-for-profit or find sponsorship under the auspices of an existing organization.

If you decide to follow this course of action, you must shop around for the right organization. Do your homework before approaching a group; know the mission of the organization, its strengths and weaknesses, and how its programs are perceived in the community. You should be in the position of choosing the organization which best meets the needs of your program. It is also useful to find someone who can make an introduction to an appropriate person already within the organization. Once this has been achieved, schedule a meeting with several potential partners. Always arrive prepared: have a plan, make a concrete proposal, and be ready to negotiate an institutional arrangement.

Community alliances

The neighborhood that you're serving is often the best place to find resources. Ask individuals and groups in the community to help you strengthen the project by offering their expertise in the areas that you are weak in or unfamiliar with. People enjoy making a contribution to their community and are willing to help if there is a clear "wish list" of material donations or volunteer tasks that they can choose from. Be prepared for the time when people ask, "What can I do?" and don't be bashful about approaching people for assistance. Never forget that "it's for the kids" can be the most powerful phrase at your disposal.

A community can be divided into three sectors: **business, government,** and **not-for-profit.** All of them are potential supporters. Local businesses might be approached to donate cash or materials for the project. A bike shop might donate helmets, a bakery might offer refreshments, and a bank might award a neighborhood grant. Develop contacts with the various local media, as they will be

LUIS RODRIGUEZ

Ismelda and Tiffany team up to overhaul a headset.

important in making people aware of your project and its needs (see Public Relations).

City and state governments might be approached in order to access community funds. For example, salaries might be raised through programs that deal with crime prevention, after-school services, or employment training. Supplies to fix bikes might come from a local recycling budget.

Not-for-profit organizations may be asked to provide certain elements of the project. A local bike club may supply ride leaders and mechanics while a youth service organization may recruit kids and provide space for educational activities and bike storage.

The options to explore are unlimited. Personal contacts are often your best lead in setting up alliances with organizations that share your enthusiasm for the project. As you set up your community network, ask the children and parents you'll work with to get involved. Not only does this get more people to back you up, it gives them a sense of proprietorship. Pride usually follows in short order.

When working with other organizations it is important to define the role of each and to follow up on agreements made with them. Be responsible in implementing agreements. Every opportunity must be taken to thank the organizations and individuals who have donated their time or money to the project. Do so in writing if possible. Experience shows that an efficient "thank you" system will build up good will in the community which, in turn, will be recycled back into your project.

All part of a day's work. Karen charms former NYS Governor Mario Cuomo.

III. Staffing

Without a doubt, your project will require adult supervision. If you're starting small, you may not be paying anyone yet. Some projects do very well as volunteer programs, but paid staff invariably boosts the output and efficiency of a project. Paid staff can also be held accountable for the project's performance, while volunteers, well, don't really have to do anything they don't want to!

Let's look at the positions that have developed at RAB and what is required of them.

The Director

Bike recycling projects, like most human endeavors, are usually initiated by one individual with vision and drive. It is this person who gets the idea, makes the contacts, schedules the meetings, writes grant proposals, coaxes favors and donations out of people, and charms visiting royalty. During the early stages of a project, this same person may also drive the truck, sweep the floor, scold the kids, buy the doughnuts and fix bicycles.

In RAB's case, this person is Karen Overton, who has uncomplainingly (most of the time) performed all these tasks. It was Karen who first lay awake at night dreaming up Recycle-A-Bicycle. She was also the one who worked long and hard to make it a reality.

Karen has a talent invaluable to every administrator: the ability

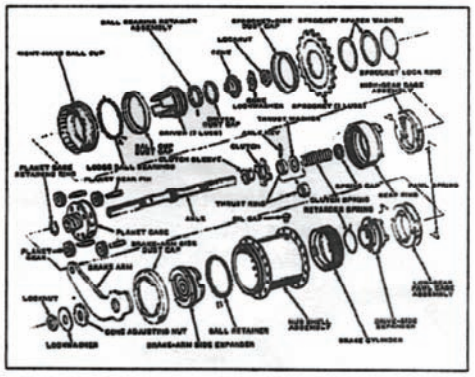
to draw in people to complement her talents. Teamwork is efficient and the projects that are able to mobilize a number of people to share responsibilities are the most successful. A good director knows how to delegate tasks, coordinate a crew, and ask others for favors.

There is one more thing that a good project director will attend to: money. It might be luck, it might be her fund-raising abilities, or it might even be the sheer worthiness of our project. Whatever it is, Karen has had great success in applying for grants. Credit must also be given to several staff members of TA that helped write the proposals that Karen submitted.

If you're curious about budget concerns and fund-raising strategies, we'll discuss them in detail in Paying the Bills.

The Instructor/Head Mechanic

There is one thing about bicycles that we can't overemphasize: They are not "easy to fix." Yes, all the parts are accessible, and, no, you don't need heavy-duty machinery, but still, they are most definitely not "simple machines." Take something as apparently uncomplicated as the pedals. Just platforms for the feet, right? Well, did you know that the right pedal unthreads in the normal, counter-clockwise direction, but the left comes off in the reverse direction? That the threads can be 1/2" or 9/16" in diameter (unless they're old-style French, in which case there's a 3rd size)? That the bearings inside are usually 5/32" but can easily be 1/8"?



A "simple" three-speed hub.

The complexity is not restricted to today's multi-gear wonders. A trusty old Sturmey-Archer 3-speed coaster-brake hub has more than 100 moving parts inside its cylindrical shell. And 26 x 1 3/8 tires? They come in two standards: regular and Schwinn. Both are labeled the same, but they are most definitely not interchangeable.

Why are we trying to scare you? Because we want to stress that your project needs a **bicycle expert**. If you're going to practice the fine art of bicycle recycling, you'll be dealing with a huge number of designs ranging from post-war newsboy specials to sleek European racing machines. There are countless manufacturers, and untold problems that can arise. Our first instructor, **George Babiak,** spent two years working as a plumber and electrician, after which he felt quite competent at those skills. He says it took three years of working in a bike shop before he considered himself a good mechanic. The sheer variation in componentry and design is what made the difference.

The *good* news is that everything short of a buckled frame tube can be repaired. You can still buy parts for bikes that rolled out of the factory a half-century ago. However, you'll be much more successful at it if you have someone around who has some experience.

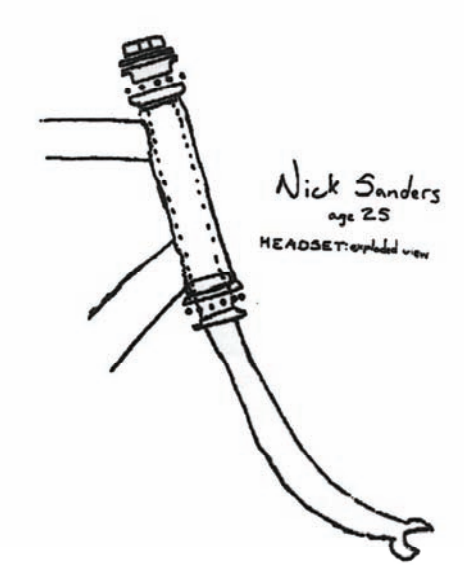
Your head mechanic (it may well be you!) is the most important person at the shop. He or she is the one who will select your tools, order your supplies, organize your workspace, train kids and volunteers, and check all the work before it leaves the shop. A regular salary is the hardest thing for a new organization to raise, but if you can afford to hire a professional mechanic, do so.

When you're hunting for that skilled mechanic, don't forget to pick one who is a good teacher. In RAB's case, we were doubly lucky with George because he had an extensive background in theater and improv comedy. While he taught our kids, George also entertained them.

If you can't pay for a pro, do the next best thing: canvass your area for volunteers who really know what they're doing. It's not hopeless! Every town has a core of bike nuts, and many of them would give their left bottom bracket cup for an opportunity to work with your project. Bear in mind, however, that you can only expect so much from volunteers. If you push them too hard, they'll bum out and leave the program.

But maybe you're planning to do it all yourself. That's fine, but if you haven't worked professionally in a bike shop (and even if you have) our advice to you is read, read, read. There are countless books on bicycle repair available at bookstores and libraries. Back issues of cycling magazines are also a terrific resource. You'll find most of the better bike literature listed in our bibliography.

Nick Sanders, RAB instructor, helps a student out. Below, a drawing done by Nick to explain headset design to kids.



Other Staff

Of course, your project needs more skills than mechanical ones. A recycling project's staff must be able to set up an inventory system, organize bike collections, recycle scrap metal and tires, publicize the program, and distribute refurbished bicycles back into the community. People experienced as community organizers, teachers, youth counselors, and administrators are also necessary to a project's success. The type and level of skill varies by project goal. For example, a project that focuses on riding must have people who can plan routes, educate kids on safe cycling, administer first aid, and do roadside bike repairs.

Your project may have a micro-economic component in which kids learn how to run a small business. They may do repairs for the community or sell bikes that the project has restored. If so, a person with a background in business would be invaluable.

Volunteers

High praise must now be heaped on all the selfless people who "just come in every now and then to help out" at RAB. Since the onset of our project, there has always been a steady stream of adult and teen-age volunteers to help us in every area of the project, from unloading trucks of donated bikes to teaching kids how to make flyers.

There are two built-in "draws" that will attract volunteers to your project. Number one is the kids themselves. People who want to contribute time to their community often see children as society's top priority. They're not wrong about that. Every hour spent working with a child is an investment in the future, especially in the inner city, where kids arc starved for guidance.

The other draw is, of course, bikes. Some of your volunteers will be individuals who love bikes and know a lot about them. Most, however, will be people who love bikes and want to know more about

them. The beauty of it is that they can all get what they want.

If you're lucky enough to get skilled volunteers, you know what to do with them: give them bikes to fix; or have them work one-on-one with the kids who are doing the fixing. At RAB, the approach with novices is almost as simple: they are invited to "adopt" a class. That means the volunteer is asked to come in and sit in on a regularly scheduled class each week. They watch the demonstrations along with the kids and learn at the same time (the material is new to everyone, so you don't have to make any adjustments in the lecture). In the hands-on portion of the class, the adult volunteer is assigned to work with a youth team. Since adults are more attentive than kids (well, usually), they'll have absorbed more of the lecture/demo than the kids. Grown-ups are stronger, too, and can more easily handle stubborn nuts or bolts. Even the most hesitant of adults can be helpful to a child. We found that no kid ever turned down an adult's help or complained about it afterward. RAB's classes can be quite large and often have four or five teams of kids working on the stands. There is always room for another pair of adult hands.

Volunteers can move up the ladder. One of our Washington Heights neighbors, **Luis Rodriguez,** is a former bike shop mechanic who worked for a long time as a bike messenger. When I.S. 218 first started up, he showed up in the first month and was impressed by our shop. From then on, no matter how hard his day on "the road" had been, he always made a point of stopping by. Before long, he was supervising our Saturday Earn-A-Bike sessions. By the Summer of 1995, Luis was earning a part-time salary as the main instructor at RAB. Luis's mechanical skills and ability to speak Spanish (he is Puerto Rican) made him a perfect choice for the job.

Luis Rodriguez, Sr.

When it comes to volunteers there's no such thing as too much appreciation. Staff members must always remember that "vols" are not being paid for their work. They are there only because they want to be, and can leave at any time. Volunteers should be warmly greeted when they arrive and profusely thanked when they leave. If you can afford it, provide them with food and drink and even throw an occasional party.

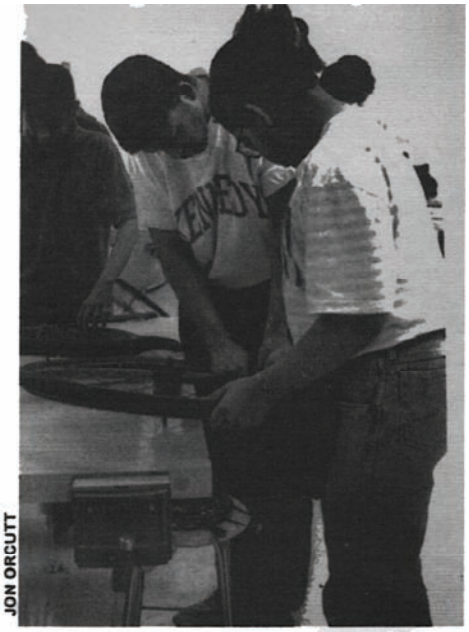

Luis Rodriguez, Jr.

The Kids

Kids aren't really staff, but sometimes they're treated that way. Like employees, RAB kids are given tasks that need to be completed in certain time-frames. Their work needs to be checked and they have to clean their areas and put their tools away. In our Earn-A-Bike program, they even collect a kind of "salary," namely, hours toward their own bike.

Everyone knows that the boss who wants to keep his or her employees happy should occasionally praise their work. So it goes with kids as well. There will also be times when you have to let them know their work is substandard. It will also fall upon you to tell them when their behavior is inappropriate for the workplace.

From time to time, you will have to settle disputes between your "workers." The most frequent conflicts between kids at RAB arise



JON ORCUTT

Teen volunteers have been an integral part of RAB since the beginning.

when the bikes assigned range widely in style and quality. It's a safe bet that your students will prefer to work on the 1993 chrome GT Freestyle over the 1968 Raleigh 3-speed. When arguments develop at RAB, they are dealt with rapidly. The rules are cited ("You must work on the bike that is assigned to you") and if a team is still disgruntled, they are told that "You learn a lot more if you can fix a bike in really bad condition." It's no lie, either.

Don't make the mistake of underestimating kids. On occasion, they have astounded us. In the end, though, you will sometimes have to remind yourself that they are not employees. You can ask for their concentration, but you can't really expect true efficiency. If a team leaves behind a disassembled bottom bracket for you to complete, you should only ask two questions of yourself: "Did they give it their best effort?" and "Do they know more than when they came in?" If both answers are yes, then your class or work session was a success.

Training Programs

Integrating volunteers through the "Adopt a Class" technique is very effective, but your project may be different from ours. Having tightly structured classes may not be a part of your agenda. If so, it may be necessary to develop a customized training program for your staff, kids, and/or volunteers. For example, you might have a seminar every Saturday afternoon called "The Mechanic's Hour," where an experienced staffer imparts some tricks of the trade to the junior members.

Then again, maybe you're determined to develop your charges into the best mechanics possible. You may find that a complete A to Z training program, complete with certification, is what you want.

No matter what the goals of your project are, there will always be an educational component to it. Training empowers people by teaching skills they have not yet acquired and by delegating responsibility to them that they would previously not have been qualified for. Those who have been trained, whether children or adults, are better equipped to participate in the project at increasingly advanced levels of activity, and some may actually go on to get a job that utilizes these skills.

Training also builds group morale. People who go through a "special course" will be more likely to view the project as their own and help to plan or facilitate project activities. Several existing projects develop leadership by training youth in advanced riding and mechanics courses so that as they get older and more skilled, they can instruct other kids, giving them an elevated status for their efforts and sometimes even a financial stipen

IV. Nuts and Bolts

The Workshop

Time, now, for the concrete aspects of a Bicycle Recycling Project.

Next to staff, the single most defining aspect of your project is the space it is housed in. A bicycle recycling workshop is a classroom, a hospital (i.e. for bikes), a clubhouse, a museum, and a factory all rolled into one. Before you move into a space, make sure it can accommodate all these facets. Consider the following:

Size- Try to get the biggest space you can. Your project will expand to fit any room or building it occupies. A project can be done in a classroom, but you'll be much better off in a good-sized space of 1000 square feet or above. The bare minimum should be 500 sq. ft., but we're sure there are projects making do with less.

Suitability- Make no mistake, fixing bikes is a very dirty business. The more industrial the space is, the better. Remember that most of the bikes coming through your doors will be extremely well-used. Many of them will be caked with filth. If someone is planning to give you a space with a white floor, sit down and have a chat with your donors before moving in. Let them know that even with daily mopping, that surface will be dishwater gray in no time.

If possible, get a space at street level. Most donated bikes are heavy, and those large collections can be quite tiring if stairs are involved. Your instructor/mechanics will also need to take frequent test rides.

The I.S. 218 workshop

Access- Will you have your own key to the space or will you have to wait for a secretary or a custodian to give it to you? Can you get in any time of the day or night? Is it available on weekends?

Exclusivity- If your space is donated, do you have to share it with anyone? On what nights does the photography class come in and how much do you have to clear to make room for them?

Sanitary Facilities- Is there a bathroom on the premises? Does your space have its own water or will you have to walk three flights to get to the janitor's slop sink? Easy access to water can make all the dif- ference in the level of your shop's cleanliness.

Ventilation- Grease, lubricants, and solvents are an inescapable part of a bike shop (see Part IV). Make sure the space has windows or a good air conditioning/exhaust system.

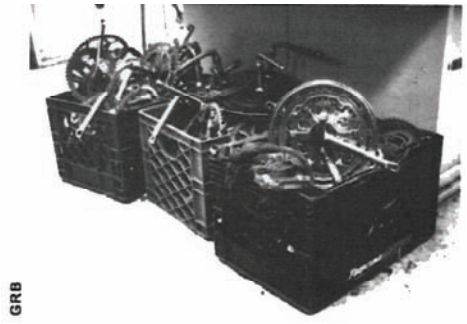
Security- This can be one of the more vexing issues facing a project director, especially if the space is to be shared. The bikes you have may be old, but they take on value as they are repaired. Even more important, tools and supplies are expensive and highly desirable. Obviously, the best situation would be a secure room with you and your staff having the only keys, but this isn't always possible. If you can't "own" your space, acquire or build some lockable cabinets. Locking 30 or 40 bikes up is more problematic, but a very long chain can be run through the frames and/or wheels to prevent easy theft.

A workshop is not always easy to find. It's often the first reason for a project to ally itself with another organization. You may well

be surprised by what you are offered. Procuring a space in New York is nearly impossible, but when TA approached the Children's Aid Society at I.S. 218, we were offered a spanking new, completely unused shop facility in the basement, complete with a blackboard, worktables, cabinets, bench vises, and a sink. The room was well-lit, spacious, and had a large bulletin board. It couldn't have been better for our purposes.

Unfortunately, classroom space was at a premium in 1994. Before long, we were forced to sacrifice part of our space to create an office for a counseling program. Our new co-tenant used another door, and we built a barricade to separate the areas, but it wasn't enough. Bikes began to disappear. It was obvious that the thieves were infiltrating through the office space, but they were never caught. The school eventually built a wall and the thefts stopped, but it took our project a few months to regain its innocence.

The moral: have a good, solid door with a lot of locks and very few keys.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Some storage systems are simple...

Organization and Storage Space

There will be many things to store. Start planning where to put things before they start arriving at your shop.

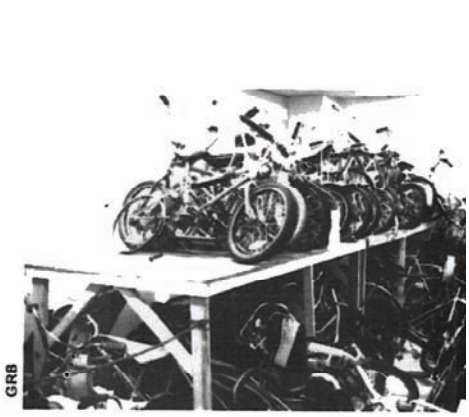
Bicycles

If your project is anything like RAB, you'll get a lot of bikes. Within a couple of months of start-up, we had an inventory of over 100. And bikes take up a lot of space. Remember that discussion with your land- lord about how much dirt a project can create? At the same time, try to break the truth gently about the number of bikes that you may be accumulating.

In addition to our workshop, I.S. 218 provided us with a small extra storeroom to cram bicycles into. Even though it was packed to the rafters, we always had to store another 30 to 50 bikes in the workshop. We tried to make sure that the bikes stored in the shop were on our recycling short-list. Eventually, we built a second tier out of plywood along one wall, doubling our in-shop storage.

Keeping bikes in a separate storage space has its drawbacks (less convenient access, for one), but it will allow you to keep a more orderly workshop.

If you're really pressed for bike space, you can squeeze more in by "flattening" them. To do this, simply rotate the handlebars 90° and re- move the pedals. Be sure to securely attach the pedals to the bike. (We usually hang them from the handlebars with twine.)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...others require materials and labor.

Wheels

Wheels are smaller, but they create problems too. Worse, they don't stack well. In pothole-ridden New York, we are deluged with wheels, most of them unusable. Our advice: process them quickly. You'll find that the most common wheel malady is a mangled rim. That still leaves you with a serviceable hub, axle, and spokes. At our Earn-A-Bike sessions, kids who want to accumulate hours are often handed a wheel and a spoke wrench and asked to dismantle it. The

child learns a little bit about tensile structures, the shop gets the parts, and the rims go to a local scrap yard. We have yet to purchase a new replacement spoke!

Even with good management, the wheels will pile up. If you've got a ceiling you can drill into, buy lots of those vinyl-covered hooks and hang the wheels up high. At I.S. 218, we weren't allowed to drill into ceilings or walls, so we built a free-standing wheel rack out of 2 x 4 lumber that holds about 60 wheels. The wheel rack looked so much more professional than the piles of wheels that our credibility at the school was bumped up a notch or two with the teachers and staff.

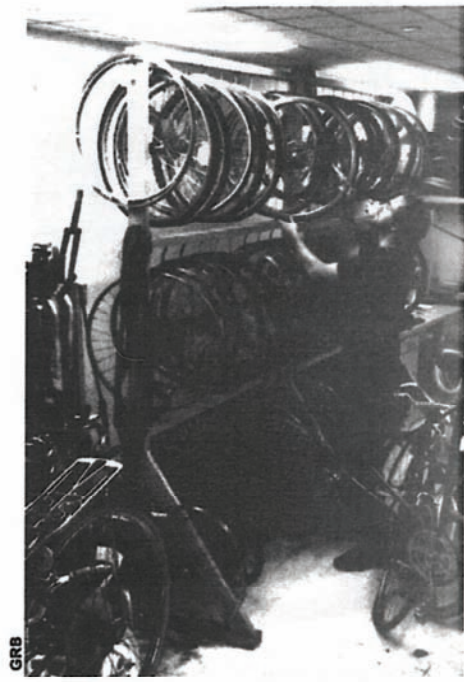
Before...

Parts

New York is hard on bicycles. We're lucky if 50% of the bikes that come in are worth reconstructing. The ones we don't fix are not wasted, though. New children who come in for Earn-A-Bike may not yet have the skills to do reliable repairs, but with a few minutes of training, they can certainly cannibalize the real wrecks. It's important to make their job easy for them. The project will need well-marked boxes for all the loose components. Sorting not only helps kids develop good work habits, it reinforces the terminology in their minds.

NOTE: Kids are very literal-minded. When told to take something apart, they really take it apart! We had to establish the following guidelines for cannibalization:

- **Take components off, but don't take components apart**. The project should have a box of brake calipers, not a box of brake caliper fragments.
- **Loose nuts and bolts go back on the parts.** Those screws that hold derailleurs on can be hard to find.
- **Leave brake levers on the handlebars**. Just a good way to keep all the little bits together, especially on ten-speeds.
- **Save everything! Unless a thing's broken.** If it's broken, determine another purpose for it, then save it. (In one campground in Wyoming, we saw old drop handlebars used as shower hooks!)



...and After

When RAB first started, we kept all our parts in cardboard boxes. Unfortunately, cardboard doesn't have a very long life span. After dumping the contents of more boxes than we can count through rotted bottoms, we finally started replacing them with plastic milk crates. We also acquired a many-drawered steel cabinet, and a plastic small parts organizer.

Sweeping the floor after a long day's work at the shop will produce a treasure-trove of small parts, especially washers and ball-bearings. Don't throw this stuff out. It can be collected in a box and periodically sorted.

Tool Storage

Before the kids start streaming into your project, install a good system for storing the tools. Try to place them in a way that makes the repair process simple and efficient for both kids and adults. A good

exercise is a tour of local bike shops. Investigate how different owners lay out their workshop and storage areas. Retailers may give you some great ideas.

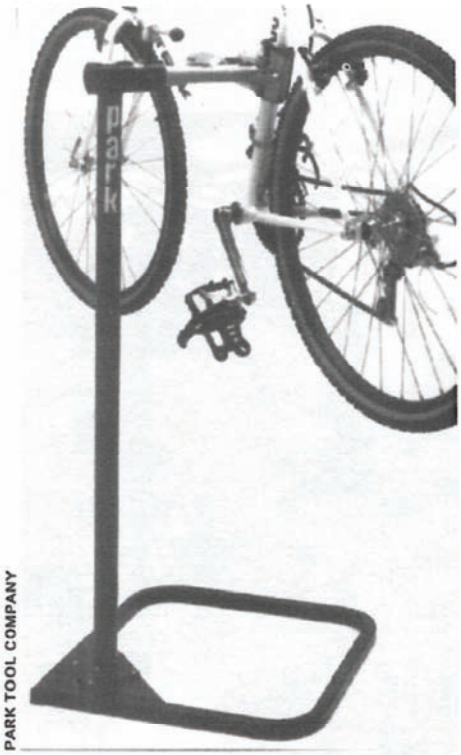
We think the best way to set up tools is by hanging them on large boards made of pegboard or plywood. Experiment with different arrangements and when you hit on one you like, draw outlines around them with a magic marker and label them with the names of the tools. After each work session, kids can easily replace all the tools and the instructor can see at a glance if any are missing. Best of all, the names of the tools are reinforced in the student's minds at every session.

An outlined toolboard

Security is never more of an issue than with tools. Shared spaces may necessitate toolboxes. Toolboxes are also handy if your project moves from place to place. If you've got more than one kit, color-code the boxes with the tool sets. This can be easily done with vinyl electrical tape, which comes in a rainbow of colors.

Don't make the mistake of thinking that merely snapping a lock on a toolbox will prevent theft. A thief will just pick up the box, take it home, and snip the lock at his leisure. Make sure the boxes are in a locked cabinet or closet.

The possibility of theft is not a pleasant one to consider, but it's better to take precautions before it happens. Ensuring good security will protect your kids as well. It doesn't matter whether your community is rich or poor; there will be one kid who will help himself to a cable cutter. Or a bicycle. The most demoralizing experience you can have is to stand before a class and tell them that something has been stolen and you hope the thief will return the goods. It's a cliché, but an ounce of prevention is really worth a pound of cure.



A joy to work with: The Park PRS-6

Selecting Tools

The tools of a bike shop are its heart and soul. A project can't exist without them. Take your time when putting together your list. Try to evaluate future needs as well as current ones. A good shop is prepared to fix any style of bike.

We must once again warn you not to underestimate the complexity of the bicycle. Many of the tools can be found in hardware stores, but you will also need some specialized ones made specifically for bikes. Practice common sense and economy, but don't cut too many comers or your mechanics and kids will wind up being frustrated.

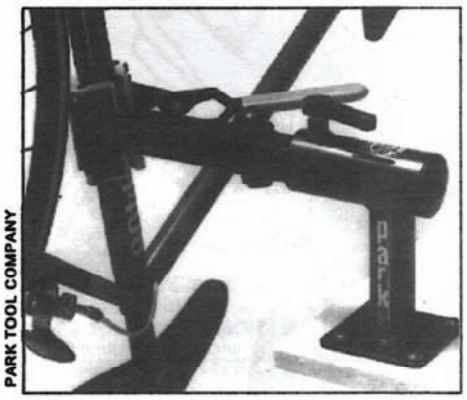
It isn't possible for this slim volume to tell you everything you need to know about tools and their uses. For that, you'll have to go to the manuals and books listed in our bibliography. We can, however, make a few suggestions and show you what we chose to include in our tool kits. Two lists of tools are provided: List A is the deluxe set-up, the one we put together for I. S. 218. List B is the low-budget approach first used by Eastern District High School. Take a close look at both of them. Your project's inventory will probably fall somewhere between the two.

RAB is a lucky project. When I.S. 218 was being set up, Ruth Messinger, the borough president of Manhattan, gave us a grant of $5000 to buy our tools. That enabled us to get 5 Park PRS-1 workstands, 5 completely outfitted toolboxes, a Park truing stand, and a separate "holy" toolbox (as it was dubbed by one boy) filled with one-of-a-kind tools for advanced repairs.

The skills of your instructor/head mechanic will determine the level of your kits. For example, I.S. 218 has fork straightening equipment. No kid at RAB ever became proficient enough to align a fork, but George, our first instructor, salvaged quite a few while the children watched.

The number of students will determine the number of tools. We found that the ideal number of kids per work station is two, the maximum four. With its five stations, RAB at I.S. 218 comfortably holds classes of 10 to 20 kids.

About the workstands: They are the most expensive items on our list, but they are also the most frequently used tools in the shop. We find that they are definitely worth the cost. They hold the bikes very securely, are a joy to work with, and lend an air of professionalism to the shop. You may see stands in catalogs for as little as $40 or $50, but your crews will spend half their time propping the bikes up. There are more expen- sive models, too, but the PRS-1's are great.



Not bad either: *The PCS-2*

If you must cut costs in the workstand area, consider buying workbench-mounted Park stands. If you have no money at all, then make your own "suspension stand." Install two hooks in the ceiling about 40" apart and drape a long loop of rope from each. When you want to elevate a bike, lift it up with one hand and put the handlebars through one loop, the saddle through the other. It beats working on the floor, and the height the bike hangs at can be customized by changing the length of the loops. If the ceiling is low, old inner tubes also work quite well for this purpose.

But there's always the floor.

Supplies...

As a recycling center, your need for new spare parts will be much smaller than that of the average bike shop. After a few weeks of operation, your bins will be full of old derailleurs, cranksets, stems, saddles, and brakes. Nevertheless, there are a few items you will need to order fresh on a regular basis:

Cables and Housing- Yes, you can accumulate a lot of old cables, and maybe those old ones will be just fine, but have you ever bent a paper clip over and over until it broke? That's metal fatigue, and old brake cables usually have some degree of it. Why take chances with brakes? Install new cables on all your recycled bikes. They don't cost much and they'll give you and your riders peace of mind. Gear cables are not as crucial and don't receive as much stress, so feel free to recycle them.

Brake Pads- Not every bike will need new pads, but you should have them available.

Tires- Recycle as many as you can, but some bikes scream for

"PEDAL AND HEADSET WRENCH" NADIA PEGUERO, AGE 13

new tires. Order some and hide them away in your shop for the right occasions. The most common sizes are 26 X 1 3/8, 27 X 1 1/4, 26 X 1.75, and 20 X 1.75.

Ball Bearings- When commercial bike shops overhaul a bearing assembly, they usually replace all the B.B.'s. After all, even microscopic imperfections will wear down races prematurely. At RAB, we compromise: we teach our kids to recognize pits and discoloration. If the old bearings shine up well, we re-use them. Nevertheless, your shop should have a good supply of them around. The main sizes, in order of impor- tance: 1/4" (rear hubs and most bottom brackets), 3/16" (front hubs and some headsets), 5/32" (most headsets), and 1/8" (freewheels and pedals). You'll also need those king-size 5/16" retainers that fit the single-piece cranksets that come on department-store level bikes. A few higher-end road bike components take 7/32" bearings, but you won't often run into these.

Crank Cotter Pins- Have we mentioned that most of your bikes will be old ones? That means you'll be replacing a lot of these. We used to wonder why these bloody things were deliberately made of metal softer than that of the cranks or spindle... until we realized that if the cotters were made of case-hardened steel, those other large and expensive parts would wear out much, much quicker.

Tube patches and cement- This one is obvious, isn't it? What may not be as obvious is that cheap, cardboard-box patch kits will work as well for your purposes as the more expensive Rema Tip-Top brand or the new "glueless" patch kits. If possible, get patches and glue in bulk quantities. Oh, and don't waste your time trying to "make your own" patches from old inner tubes. They just don't hold as well.

Lubricants- For those of you who are new to the bike world, "grease" is the thick glop you stuff bearing assemblies with, and "oil" is the lighter liquid that you squirt onto chains, pulleys, and other moving parts.

There's no better way to start an argument in a bike shop than by declaring a certain brand of grease or oil is "the best." Each staff member will have his or her own opinion, and will be prepared to defend it loudly. Though they are made from many different substances, the real truth is that any lubricant is better than none. We're partial to Phil Wood or Park grease and Tri-Flow oil, but we'll use anything we can get cheaply or for free. Incidentally, we've been told that the handyman's favorite lubricant, WD-40, is really a solvent. We've acquired it for as little as $8 a gallon, so we use it anyway.

Cleaning Supplies- You'll need tons of rags, paper towels, cleaning agents, etc.

...and Suppliers

Where does one get all this stuff? If you're a small operation, start by making friends with a bicycle shop. If a local shop owner likes your project, and doesn't perceive it as "competition," he or she may be persuaded to donate tools and supplies, or at least discount them for

you. If nothing else, a bike shop can be a great source of information. Who else could answer the question "Did the 1978 Motobecane Nomade come with English, French, or Italian bottom bracket threading?" (For your information, it came with Swiss threading.)

There are also a number of mail-order companies that specialize in bikes. The prices may be lower than in a retail shop, but the service will not be as personal. It's hard to make friends with a 1-800 number. If you do order some things from a catalog, don't antagonize your bike shop buddies by boasting about it in their presence. The appeal of mail-order shopping to consumers is a major threat to small retailers.

For a larger project, it would be wise to acquire tools and parts wholesale. Bicycle-related equipment is made by so many different companies that it's not practical to try and order directly from the manufacturer. You'll want to make contact with a distributor that carries products from a large selection of manufacturers. There are many of them , and they're located all over the country.

Wholesalers are wary of selling to private individuals, so the initial contact should be handled delicately. It's unlikely that you'll have the credentials, or credit rating, of a "real" bike shop, so you'll have to convince the distributor of your project's legitimacy. Bicycle businessmen are just like everyone else, however. Once they realize that you're really working with kids, they may assume a paternal relationship with your group. This can lead to a special status with your distributor.

The Dirty Work

Scrubbing is 90% of mechanic's work. An "overhaul" is largely a very thorough cleaning of the parts you can't see. Your shop will need some way to dissolve the kind of thick sludge that accumulates on drive trains and in ball-bearing assemblies. Soap and water just don't do the trick. The job calls for solvents, which are more powerful, but raise issues of health and environment. Let's look at the options available:

Gasoline- Out of the question. It's cheap, but just too hazardous to consider, even for use by adults.

Kerosene- Inexpensive, available at any hardware store, and slow to evaporate. It's been in use for some time at I.S. 218. The kerosene is kept in medium-sized, lidded plastic containers. When a part needs to be cleaned, the kerosene is applied with old toothbrushes and wiped off with rags or paper towels. The system works reasonably well, but we're concerned with the fumes produced by the kerosene.

Commercial Parts Cleaners- There are a number of companies that serve mechanic's shops, the best-known of which is Safety-Kleen. For a monthly fee, they will supply you with a parts cleaner, which usually consists of a large drum of solvent topped by a shallow pan with a motorized pump. Attached to the pump is a hose with a stiff brush at the end. When the unit is on, the solvent is constantly re-circulated through the hose and runs through a filter

Tips from Oregon

We wondered how the most environmentally conscious state Deals with the thorny issue of oils and solvents, so we called Brian Lacy of the Community Cycling Center in Portland. "We try to use as few petroleum distillates as possible," he said. "We remove most dirt with plain old steel brushes."

What about really stubborn grey urban slime, such as we find on our bikes in NYC?" one of our local suppliers suggests LPS concentrate as a solvent.The stuff is as cheap as $13.95 a galIon (wholesale)and can be diluted."

As for oil, Brian tries to use vegetable-based lube (Pedro's is one brand), and as little of it as possible." You only need enough to stop a chain from squeaking."

As a point of interest, when Brian Lacy goes to Washington this year to pick up a "Renew America" award, he will present a 23-inch recycled yellow Schwinn Varsityto President Bill Clinton.

before draining back into the drum. The top of the cleaner has a lid that can be closed when the unit is not in use. Safety-Kleen's solvent, which meets OSHA standards, is replaced and disposed of monthly by a driver from the company. Used by many pro bike shops, this is undoubtedly the fastest, most efficient way to clean parts. It may be safe for adults, but the solvent seems rather potent for kids. It's also expensive, with the cost of a unit estimated at $500 a year.

Simple Green, Citrus Solvents- There are a number of cleaning agents manufactured that purport to be completely safe. They certainly smell a lot safer, and may well be the best route for a kids' project. They are also not cheap. We're still looking for someone who can supply it to us in large quantities (we've only seen the citrus solvents in itty-bitty bottles). Simple Green, a brand-name, is widely available.

Staying Clean: During and After the Work

Most kids don't mind getting dirt on their hands, but unlike Charles Schultz's Pig-Pen, they're very happy to wash up afterward. Bicycle dirt is the most tenacious grime known to humankind, and it's best to use the methods of the professionals to deal with it. You will not make friends with parents and teachers if you send their kids back looking like they've crawled out of an engine room. The children, too, will be grateful, and much more willing to dive into jobs the next time they come to the shop. Especially the girls. Some families may be raising kids free from sexual stereotyping, but we find that most girls like to be cleaner than boys. They make just as good mechanics, though.

The perfect "urban commuter". A three-speed bike.

First of all, plain soap is not good enough for cleaning hands. Make sure you're well stocked with a good quality hand-cleaner, the type sold in hardware stores. If it has pumice in it, even better. We found that our kids love to use (and waste) this stuff, so dole it out carefully. Let them know what the "right" amount is ("No bigger than a walnut, guys!").

Make an ample supply of aprons part of your first tool order. They should be the kind that cover the chest, waist, and thighs (adult-sized ones work just fine). New boys sometimes balk when they have to don something like their Mom wears in the kitchen, but the resistance quickly erodes. We found that the professional look of our aprons eventually took on a certain "coolness." Aprons or not, tell your kids to wear old clothes to the shop. One good idea is to keep a box of old extra-large T- shirts in the shop. They're not as cool as aprons, but kids can throw them on over their own clothes.

Your shop should also have some heavy-duty rubber gloves in stock, especially for use with solvents. Dishwashing and surgical gloves are not durable enough for the work your kids will be doing.

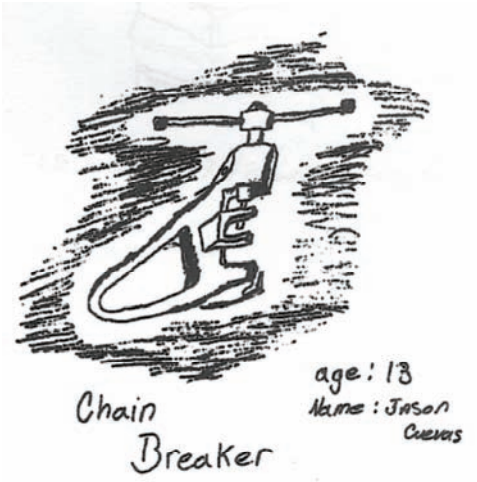
Atmosphere

When a new group of children is ushered into RAB, the first horn- consists of a solemn ritual we call "Rules and Tools." After compiling a class roster, the project's purpose and goals are carefully explained. The students are informed of what the instructor's

expectations are. Stress is placed on the fact that they will be doing "real" work with "real" tools, which calls for a responsible, hard-working attitude. They are reminded that every single process they perform in class or Earn-A-Bike brings a bicycle closer to returning to the road.

The kids are then gravely asked to regard the large sign in the front of the class that lists the 10 rules of Recycle-A-Bicycle (see p. 60). Sometimes students are called upon to read them, one at a time. The meaning and importance of each rule is defined for them in an interactive, question-driven style (e.g., "What do you think it means to 'respect' your tools?"). Rules that exist for shop safety are given extra-special emphasis.

Rules and Tools winds up with an explanation of the shop's tool storage system and a reminder that no class or session is done until the tools are put away, the garbage thrown out, and the worktables wiped down.



In successive classes, the true climate of RAB is quietly brought to the fore. The students are welcomed and nurtured, good work is always praised, and jokes are regularly cracked. The students begin to realize that the bike classes are very different from the rest of the school day. For one thing, the adults are addressed by their first names. Very little homework is assigned, and performance is evaluated through observation rather than the repetition of rote knowledge. It becomes clear that the atmosphere of the shop is one of "serious fun.

Weekend and after-school volunteer/Earn-A-Bike sessions are even more relaxed. A donated tape deck plays music and snacks and beverages appear from time to time. Adults, teens, and kids mingle in a cheerful hubbub of voices and clatter. It may appear chaotic to an outsider glancing through the door, but closer inspection will reveal that everyone within is productively engaged.

Depending on your shop and the space available, there are other amenities that can make a shop comfortable. Coat racks and shelves will reduce clutter and keep jackets and back-packs away from grimy surfaces. Adult volunteers will certainly appreciate the presence of a coffee pot and/or a small refrigerator.

Introducing music into your shop will make it very popular but it can generate some problems. Kids being kids, they will almost certainly test the limits. You may want to reserve the right to restrict content, and you should certainly keep a firm hand on the volume knob.

The Office

No mechanic likes to think about paperwork, but it's a fact of modern existence. You're going to have to keep records, write letters, and fill out forms. If you're lucky, a partner organization might set you up with everything you need. If not, try to procure the following (with a little luck and a good spiel, you could get it all for free):

- A computer (who can function without one nowadays?) and a

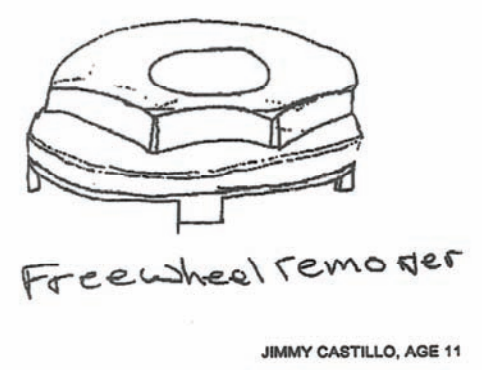
printer or, at least, a typewriter

- A telephone (include those monthly bills in your budget)
- A fax machine
- Desks and chairs
- A filing cabinet
- Bookshelves
- A photocopy machine (if you're rich)

V. The Bicycle Collection Network

Where They Are

If you're on the verge of creating a project, there's probably one fear keeping you up at night: Where do I get all those free bicycles? In reality, this may be the smallest of your worries. It will not take long to discover that there is a vast abundance of bicycles. There are more of them in this country than cars. Most, sad to say, are not used very much. They may have been outgrown, replaced by spiffier models, or damaged beyond the willingness of an owner to pay a repair bill. Or perhaps the owner just didn't like cycling as much as he thought he would.



JIMMY CASTILLO, AGE 11

For whatever reason, hundreds of bicycles in your community are at this very moment languishing in alleys, basements, hallways, attics, and garages. The pure and simple truth is that people would rather give their bike a home than throw it out. Your project should capitalize on this fact.

To organize a bike collection you must draw upon your community alliances. Put announcements in newsletters of local organizations and on radio stations, place a story in a newspaper, ask a business to sponsor an employee or community bike collection, and make presentations to interested groups such as civic organizations, cycling clubs, or schools.

Bike shops often have abandoned bikes in their storage area. For a tax deduction, shop owners may be willing, even delighted, to donate them to the project. The St. Louis Bicycleworks successfully organized a bicycle trade-in program with a sympathetic shop. Customers were offered a discount on the purchase of a new bike if they donated an old one to the youth project.

Other sources of bikes are local police departments, college campuses, and landfill sites. In some areas, a dedicated group of nocturnal scavengers can simply scour the area on garbage night.

What You'll Get

As we've pointed out, acquiring bikes rarely poses a problem. The challenge comes in trying to deal with the sheer number of donations. However, you don't have to take everything. You can afford to be selective and set standards for acceptance. For example, your group may only accept bikes that are in working condition, or only bikes that have a complete set of wheels. Match your collections to your project goals. If your project will deal exclusively with children's bikes, then perhaps that should be the only kind you'll take.

In our own project, all bicycles are accepted. That means we get a lot of junk, but we deal with it. Approximately one fifth of donated bicycles are irreparable and get stripped for parts. Even the worst cases have a re-usable cable clip or binder bolt dangling from their frames.

Bicycles are as prone to changes in fashion as anything else in our fast-moving society. In the 1970's, everyone had to have drop-style handlebars, whether they wanted them or not. In the 1990's, the mountain bike reigns supreme in the adult market. For the last 15 years, cycling magazines have ceaselessly fueled the fat-tire frenzy. Each year brings us a fresh crop of "innovations" that the with-it rider must have. We've been bombarded with shock forks, exotic materials, and ever- expanding freewheels (a 24-gear set-up is now common). Meanwhile, the time is ripe for bicycle recyclers. Millions of perfectly good 10 and 12 speed road bikes have been consigned to the dustbin of history. Put the word out that you're looking for old bikes and you'll be inundated with them.

Unfortunately, when the time comes for kids and customers to pick bikes, they will tend to pass these old racehorses over for the few mountain bikes that dribble in. One way to deal with this is to order a good supply of straight handlebars and upright brake levers and turn a few of those road bikes into "hybrids." You can even add thumb-shifters, if you like. These upgrades will raise costs, but your final product will be much more popular. The lighter wheels of a converted road bike make it a superior choice for anyone who doesn't spend their time bombing down dirt trails.


DAN MORGENROTH

In the dustbin of history? *Ten-speeds made great bikes in the 70's. They're just as good today.*

Ten years ago, used mountain bikes were hard to come by. As time goes by, however, more and more mountain bikes are being scrapped. Take any of these you can get because, as noted above, they are the flavor of the decade. Placing recycled mountain bikes is considerably easier than with any other style.

You're going to be working with children, so it makes sense to acquire plenty of children's bikes. Single-speed and coaster brake designs make most kid's bikes easier to fix than their adult counterparts. They also tend to be out-grown rather than worn out, which ensures a steady supply of donations. Best of all, they have a built-in appeal to your kids. This comes in very handy if you're planning an Earn-A-Bike component for your program.

Kid's bikes come in as many levels of quality as adult bikes. At this writing, GT brand freestyle models are considered by our kids to be the "hottest" available.

Expensive bikes get a lot of attention, but the biggest segment of the market is occupied by the cheapest product: the department store bicycle. The vast majority of bikes are sold by mass-market retailers at a price between $75 and $150. The limited sizes, spot-welded frames, and stamped-steel components of these cheap bikes attest to a lower level of quality that matches the price. Huffy, Murray, and others crank out 10- speed, mountain, and kid versions of budget bikes by the million. You'll get a lot more of these than you want. They can be made ridable, but the process is never quite as rewarding

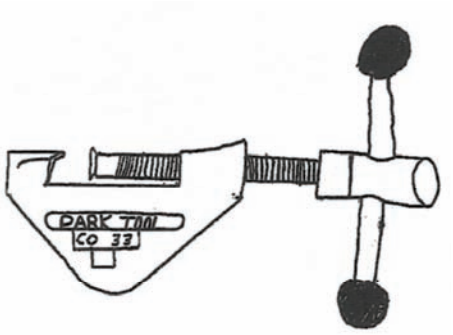
as with models that meet the standards of true bicycle retailers. If you're frustrated by a surplus of budget bikes, consider refusing to take them or charge a recycling fee to the donors.

How to Get 'Em

Although RAB accepts all donations, we don't go too far out of our way to pick them up, mainly because we don't have a van! The cost and impracticality of maintaining a vehicle in Manhattan ruled it out immediately. We don't really mind because, after all, we are an environmental group.

There have been times when we couldn't do without a truck. REI, the sporting goods retailer, arranged a massive collection of bicycles for us in New Rochelle, about 50 miles from the city. To pick up the 80-odd bikes, we had to rent a large truck. It was well worth it, though, for suburban cycles tend to be in better condition than their city cousins On other occasions, we've moved old bikes with TA's cargo bicycles.

Barring special circumstances, we'd suggest that you avoid getting involved in the transport of bikes unless you are equipped with a truck or van, a driver, and a budget for transport. It is difficult to coordinate individual pick-ups, especially if you are relying on volunteers, and you'll be busy enough as it is. Donors with one or two bikes will usually be more than willing to drop them off at your site. For their sake, it's a good idea to advertise (and commit to) fixed drop-off locations and times. Building a weekend workshop day into your project's schedule will make it easy for the working public to bring their bikes to you.



"COTTER PIN REMOVER" BY JUAN ALVARADO, AGE 11

At I.S. 218, the tale is still told of the elderly man who walked into the workshop one Saturday afternoon pushing an unridable old bicycle. Out of curiosity, someone asked him how far he'd come. He said he had started in Jersey City, walked along the Hudson River, and crossed the George Washington Bridge into Manhattan. A hush fell over the room. Kids and adults alike were in awe. The old man had walked 12 miles to donate a bicycle.

If you choose to pick up bikes from individuals, you might follow the lead of Pedals for Progress, a New Jersey-based group that ships bikes to Third World nations. PfP organizes collection drives on week- ends and charges a $5 fee per donated bike to cover the cost of transport.

Where They Go

Let's say your project is in full swing and you're churning out two dozen bicycles a month. What do you do with your finished product?

Roughly 25% of our finished bikes go to the kids who work on them in the Earn-A-Bike program. Teen and adult volunteers, too, have the option of earning bicycles in exchange for their help.

RAB also donates bikes to other non-profit organizations, a program that began with our partner organization. In the first year of our operation we created a fleet of bicycles for a summer day camp program run by the Children's Aid Society in Chappaqua, NY. Since

then, we've donated bikes to Outward Bound, the National Gateway Park Service, Harlem Hospital Pediatrics Center, and the Urban Youth Bicycle Project in Harlem.

There is a special dividend garnered through these donations: a genuine involvement by our students in community service. When a drive is on, all the kids who work in the shop are aware of it. A herd of bicycles destined for the chosen organization begins to grow in a corner of the shop, and everyone contributes to it. This process reached its most meaningful height when Pedals for Progress asked RAB to fill a container with used bikes and ship it to the Dominican Republic, the homeland of most of our kids.

What else can you do with recycled bikes? Well, you can sell them We'll deal with bike sales in The Budget.

Reuse and Recycling

The essence of RAB is reuse and recycling. Both practices are employed equally in the project. The most glamorous of these efforts is the repair and distribution of bicycles. However, as noted previously, many bikes aren't worthy of repair. These are stripped of parts, which are very valuable and help to minimize orders of supplies. The remaining frame is then turned into a sitting-stool or hauled off to the local scrap dealer along with all the other discarded metal. Steel does not fetch a high price if any at all, but your bent and dented alloy rims are worth something.

ALEXIS CEPIN, AGE 13

Tubes and tires are items that accumulate quickly. RAB collects tubes in massive numbers from local bike shops. The majority are salvageable and kept on hand in the RAB shops. To support the TA-sponsored NYC Century ride, kids patched a hundred to have on hand at the rest stops. The unsalvageable tubes are transformed into a variety of items such as bungle cords, handlebar covering, and lawn chair seats. Tires are more problematic. Check with the local sanitation department for the address of a company that recycles tires. The only uses for worn tires that we've discovered are as elements in an obstacle course and raw material for artists and sculptors.

One of the more interesting experiments we did with veteran RAB students was to develop a curriculum on industrial design. We dedicated 8 hours of class time to create useful items from the junk generated at the bike shop. Among the class projects were designs for a clock, a candle holder, jewelry, and a game of skill. Kids view challenges like this as fun.

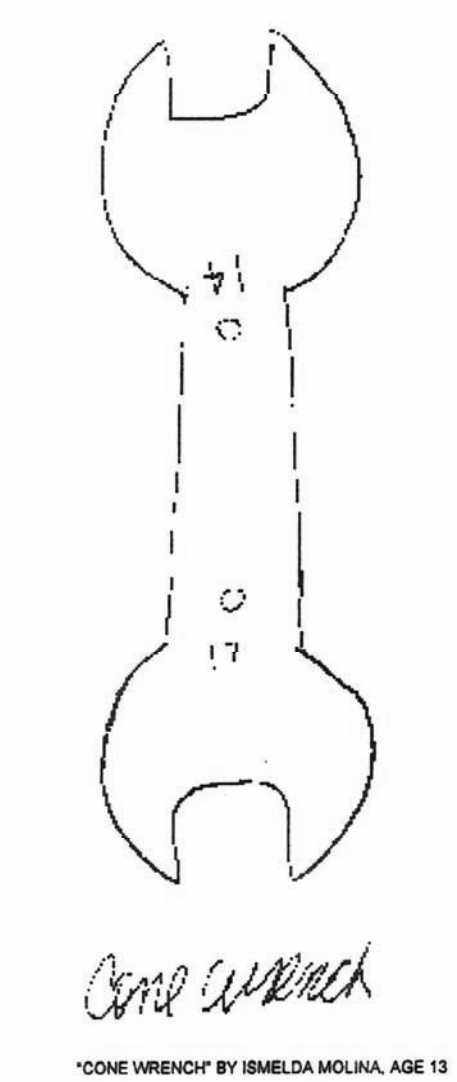
VI. Curriculum

Content

It isn't hard to get kids to have fun. Set up a game of tag, give them a ball, or sit them in front of a computer game. You'll see the reputed "short attention spans" of children lengthen far beyond the limits of any adult's patience. No, fun is definitely easy. The tough

part is finding an activity that will both entertain and educate kids. In addition to being fun, a good program should:

- Impart new knowledge
- Reinforce lessons learned in school
- Develop social skills
- Set a clearly defined standard of quality
- Provide a solid work ethic and a sense of personal accomplishment
- Foster skills that will be of use in the "real" world as well as in school



"CONE WRENCH" BY ISMELDA MOLINA, AGE 13

RAB is one of those rare programs that fulfill all of these requirements, especially the fun part. On any given day at one of our shops, the visitor can walk in and find dozens of boys and girls completely absorbed in their activities. They're happily getting their hands dirty, but they're also solving complex problems, developing their motor skills, learning how tools and machines work, and, last but not least, making a concrete impact on behalf of the environment.

For us, the items listed above more than justify the existence of RAB in an educational setting, but we take our concept a bit farther. Throughout our classes, we relate the lessons we're teaching to other areas of study. For example, we tie bicycle development to modem history by pointing out that the Wright brothers couldn't have developed the airplane without the background in lightweight engineering that they acquired as bicycle mechanics. We also point out that advances in bi- cycle technology paved the way for automobiles and other machinery.

Reading, writing, and artistic skills find a place in RAB, too. As we are writing this, an I.S. 218 group is developing a campaign to transform an unused strip of land along the Hudson River into a footpath and bikeway. They're creating logos, posters, and brochures to promote the scheme.

Of course, our main objective is always to teach children the art and science of bike repair. Just how far do we go with them? Pretty far.

Structuring Your Courses

In the late 1970's, Charlie McCorkell and Hal Ruzal began offering a seven-week repair course for adults at Bicycle Habitat, their Manhattan bike shop. When George Babiak worked at Habitat, he took over as the teacher. That same course, expanded to eight sessions, became the model for RAB's classes.

Each session is unique, but some features are consistent throughout the course. Approximately half the session (or less) is spent on a lecture/ demonstration. A suitably generic "demo bike" is selected by the instructor beforehand. As the students watch, the instructor goes through the procedure and completes it. Usage of correct terminology is emphasized throughout the demo. The students are then split into teams, put on their aprons, and are

assigned to workstands (each with a pre-selected bicycle already on it). They then do the "hands-on." If volunteers are available they, too, are assigned to teams. As the kids work, the instructor roves from stand to stand, making sure the assignments are proceeding well. When they are done, the instructor checks the work, makes any necessary final adjustments, puts a final "oomph" on all the nuts and bolts, and delivers high praise for a job well done. The class ends with clean-up.

Curriculum Breakdown

1. Rules and Tools/Fixing a Flat- Check back to Nuts and Bolts ("Atmosphere") for a description of Rules and Tools. Fixing a Flat covers removing a rear wheel, using tire levers to pull out the tube, finding and properly patching the hole, and putting everything back in place. We start with a tire that's already flat. If we don't have a flat tire on hand, we'll use a thumbtack to create one. We don't let the kids see us doing this (they might get ideas).

2. The Brakes- After defining the various types of brakes (caliper, coaster, and cantilever), a standard caliper cable is removed and replaced. The brake is then adjusted with the "third hand" (a name every kid remembers), lubricated, and checked. The difference between the adjusting nuts (which hold the caliper arms together) and the "main" nut (which holds the brake onto the frame) is clarified. If any bikes on the stands need new pads, we cover that, too.

Old front forks on a handy rack constructed of electrical conduit and 2 . 4's.

3. The Front Hub- The initiation into ball-bearings and grease begins with the simplest of the b.b. assemblies. The hub is taken apart, totally cleaned and repacked, then re-assembled. Some time is devoted to the concept of friction and the reason for using bearings.

4. The Rear Hub- Same procedure as the front, but with the added challenge of removing the freewheel. The bench vise is introduced.

5. The Bottom Bracket- Quality bikes come with 3-piece cotterless cranks, but our introduction to the heart of the bicycle always starts with the Ashtabula, or 1 -piece, crankset. It's the most common in the shop and is the easiest for kids to work with.

6. The Headset- The last of the overhauls. Headsets may not seem as important as the other classes because they're "only" for steering, but it should be noted that this class also includes stems and handlebars, which are areas of potential danger if not maintained properly. For this reason, stem expander bolts are explained in detail. We favor single-speed, coaster-brake bikes for this class because there are no cables to complicate the job.

7. Derailleurs and chains- Many kids don't have the foggiest notion of what goes on when a shift lever is pulled (that goes for adults, too). We always start this class with a demonstration of how to shift gears on an elevated bike. There's usually a "wow" or two when they see the chain jump from one cog to another. We then remove and replace a cable and perform the various adjustments. If there's time, we demonstrate the proper way to use a chain-link tool.

8. Final Exam- RAB's 3-page test is a mix of multiple-choice

questions, a pictorial matching column, and one big, scary essay question that tests the imagination more than anything else. Some kids find the test extremely difficult, others think it ridiculously simple. You'll find a sample exam in the appendix.

If there's an area that RAB is deficient in, it's in riding technique. Our inner-city locations make it difficult to organize group rides for our students. We do know that they'll ride anyway, so we cover safety practices throughout the course. At some point during the first four weeks, we also show the kids "Bicycle Safety Camp," a videotape on safe cy- cling produced by a cough medicine company. It's a bit hokey, but it's the best video we've seen on the subject.

Advanced work

RAB's course is quite thorough, but it still only scratches the surface of bike repair. The kids who really start learning are the ones who come to Earn-A-Bike or Fix-Your-Own-Bike sessions and put their knowledge into practice. They also happen to be the kids most ready for more knowledge, so it is in these less-structured sessions where more difficult procedures are covered.


GRB

Syed trues a wheel

As the need for advanced work arises in the shop, an instructor or skilled volunteer will take on the job and have one or two kids act as assistants. Advanced work can include the following:

- Coaster brake hub overhauls
- Cantilever brake adjustments
- 3-piece cranksets
- 3-speed adjustments
- Freewheel overhauls
- Wheel truing/building
- Fork and frame alignment

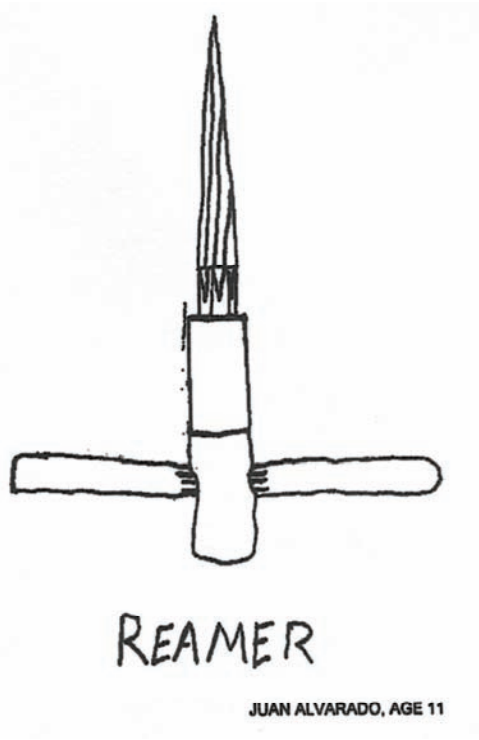
Wheelbuilding is the most arcane of bicycle skills and only one teen volunteer, Omar Guzman of I.S. 218, has actually completed the job of lacing a rim to a hub and properly tensioning it. Many kids have trued wheels, however, with varying degrees of success. Fork and frame alignment is even more problematic for kids because it requires both dexterity and brute strength. Traffic accidents (a common cause of bike damage in the Big Apple) tend to be so catastrophic that very few bikes damaged thusly can be aligned, anyway.

Evaluating the Work

Although we take our exam results seriously, they are not always the best indicator of a child's progress, particularly in a school like I.S. 218, which has a heavy immigrant population (many students there don't know English). We believe the best way to evaluate a child as a student of bicycle mechanics is by direct observation.

Mechanics are like musicians. It's very easy to tell who in the classes are the "good" ones. These are the kids who work cleanly and efficiently, adjust bearings to roll smoothly, and ask all the right questions. Others have genuine difficulty in grasping the basic

concepts. When grading students, we try not to weight our scores too heavily toward "natural talent." Instead, we gauge the level of effort and the amount of concentration devoted to the task. In our estimation, the kids who try hard and show up regularly are the ones who perform the best.



JUAN ALVARADO, AGE 11

Class size and Time-frame

Bike repair takes time. Make sure your instructor has plenty of it. There should be time allotted for set-up before the class and for clean-up and check-over afterward. We found that the class itself should usually be 11/2 to 2 hours long. Remember: you'll need to show students how to do a process, they'll then need to do it themselves, and then you will all have to put the shop back in order. Nothing is worse than having one class come in on the heels of another and work in the same mess.

The most effective classes happen when the students start and finish a job in the same session. Don't hold any jobs until "next week." In a busy bike shop, it's too hard to keep a bunch of loose parts together with the bike they came from.

RAB started small with a test group of 12 students that were handpicked by the faculty of I.S. 218. In June, July, and August of 1994, we expanded rapidly by taking on 4 groups of 15 students each from the Children's Aid Society Summer program. These early classes were structured around what we believed was the ideal format: each group met with us for two hours, twice a week, for a total of 8 sessions.

Our real test came in the Fall of 1994, when we integrated RAB into the school schedule. We still held all our classes on Wednesday and Friday, but now we crammed 4 groups into each of our teaching days: two 45-minute morning groups, an afternoon session of two hours, and a 90-minute after-school class.

At the time of this expansion, NYC's school system was undergoing tremendous upheavals. I.S. 218 had several hundred extra students unexpectedly dumped onto them, forcing the faculty to create a new "Town Meeting" format. The Town Meetings were basically large assembly classes held in the auditorium for a hundred or more students. Our 45-minute classes were drawn from these Town Meetings, and we found ourselves with 25 students in each of these short classes. We feared there would be too many students and too little time.

We were right. The most successful classes were the 2-hour afternoon sessions, which did not exceed 15 students. For the short classes, we broke up our 8-session plan into 16 segments, with a demonstration one week followed by a hands-on the next. It fit into the school day, but with a full week between demo and actual practice, the learning process suffered greatly.

Tricks and Gimmicks

As we taught, we discovered certain techniques that kids responded to. Here's a small sampling of them:

Clever demonstrations- Kids always wonder what those

little steel "balbarians" (a frequent NYC kid's corruption of "ball bearings") do inside the bicycle anyway. We talked about the reduction of friction a lot, but the best way to illustrate the principle is with a heavy toolbox. If the box is sitting directly on a table, it is very hard to slide around, but if a number of ball bearings are placed underneath it, it can be spun around with an index finger.

Brilliant Analogies- To underscore the importance of correct nomenclature, George sometimes delivered this lecture to the kids: "Going into a bike shop is like going into a restaurant. You can't just walk in and say 'Uh, can I have some of that stuff you put in your mouth when your stomach hurts and you swallow and it makes you feel good?' You've got to ask for 'food!' And if you can ask for a burger and fries, you'll get even better results."

Unforgettable Metaphors- "Okay, when the hub is all nice and clean, put in a nice bed of grease... Gently ease the bearings into the bed.... Now, tuck them in with a blanket of grease." After giving this description, we'll often hear kids in the hands-on part scold each other for forgetting "the blanket."

Awesome Displays of Superior Strength and/or Knowledge- Winning the respect of students is half the battle of teaching. Instructors can easily gain status with students by undoing a nut that no kid can budge. Showing that you know more than they do works, too. Every now and then a kid shows up who's seen and done everything. He'll usually say something like, "Oh, bikes. I know all about bikes. I take 'em apart, I put 'em back together. I do everything!" Our stock response to this is "Terrific! I need someone like you! While I teach these guys, could you take this wheel over to the truing stand and straighten it out?" It doesn't take long for the kid to realize that he's in way over his head. Depending on your own abilities, you can choose to dramatically true the wheel in front of the class, but it won't be necessary. Your point will have been made.

Inspirational/Informational posters- Early on in RAB, George posted a sign that read "Remember: You are the Doctor, the Bicycle is your Patient!" Karen thought it might be considered "corny," but it often struck a chord in kids. Once, a boy named Luis Felipe knocked over a bike while arguing with another student. When his attention was brought to the sign, he shrugged his shoulders and said "Well, I'm the Dr. Kevorkian of bikes."

We'd suggest decorating the walls of your shop with as many instructive posters and displays as you can. Some can be obtained from bicycle manufacturers, others can be created by your staff or even the kids themselves.

Earn-A-Bike

It would be easy enough to start a project that just gives bikes away to kids, but there's a basic problem with unconditional gifts: they're just not valued as highly as the things we work hard to acquire. How many bright and shiny Christmas toys have you seen turn into February's sad, broken junk? The possessions we remember most fondly from child- hood, however, are the ones for which we

saved up over excruciatingly long weeks or months. Earn-A-Bike goes not one, but two steps beyond the old process of saving pennies from one's allowance: it gives kids a job that pays the way toward their bicycle and teaches them how to care for it at the same time.

We've found that this program, in one form or another, is the main reason for the existence of quite a few projects. Chances are it'll probably be a component of your project, too. It would be too cruel to dangle bikes in front of kids and not offer them the chance to earn one.

Through trial and error, we've established the following guidelines for operating our Earn-A-Bike system.

The Unit of Currency- ...is simply The Hour. To earn a bike, a kid must put in 24 hours of shop time. The "price" is the same for any bike in the shop (except "baby" models, which are lower). Some projects adjust the number of hours depending on the style and quality of the bike. We've heard of some models going for as much as 120 hours in Indianapolis' Bicycle Action Project. One reason we haven't set different prices is that we have too many kids. Extending their stays would crowd the shop even further.

The challenge of Earn-A-Bike is to keep careful records with precise running totals. Expect kids to ask "How many hours I got?" roughly every 8 minutes.

We Decide on the Work- Most kids expect to come in, pick a bike, and start working on it. We don't let them. The first 18 hours of the 24 have to be spent on the jobs we give them. This rule holds firmly for all kids. The work we hand out can include repairs, bike cannibalization, tube reclamation, shop organization, cleaning, or anything else the project needs done.

Picking the Bike- After Hour 18, students are allowed to designate shop bikes as their own. A tag is placed on the handlebars that marks the bike as "taken." Yes, some models are certainly nicer than others, but they are awarded on a first-come, first-served basis. The bikes must remain in the shop, but the kids can spend the next 6 hours of their obligatory time fixing up their designated bike. Once they hit Hour 24, it's theirs.

Class Time Doesn't Count- RAB is unusual because our classes are part of the school's curriculum. If a kid is assigned to us, he or she is obliged to come. It would be too easy for kids to rack up time this way. For this reason, Earn-A-Bike hours can only be earned after school or on weekends. If we are charged with unfairness, we quietly inform them that we're already giving them something during class: the skills of a professional bike mechanic. If further disgruntlement is voiced, we add that adults are happy to pay George $140 to take a course in bicycle repair that they're getting for free. We don't get too many complaints after the first class.

Your project may not be housed in a school and your teaching system may not be as formalized as our own, so feel free to modify these rules to fit your own situation. The important thing is to establish them before the kids start clocking in. Be firm in enforcing the rules of Earn-A-Bike and make sure they remain consistent from

LUIS RODRIGUEZ

Before the tool boards, there were the toolboxes. Each set of tools was taped with a color that assigned it to a specific box.

kid to kid (no one is more sensitive to inequity than children).

At I.S. 218, there are two weekly sessions for Earn-A-Bike: Wednesdays, from 3:30 to 5:00, and Saturdays from 11:00 to 5:00. Sometimes there are 20 kids or more in the room during these hours. If you can arrange or afford it, we suggest having more sessions with less kids in each. The time will be a lot more productive. Adult volunteers are very useful in these sessions, too.

When kids first come to us, they often declare that they'll spend "the whole 6 hours" every Saturday and earn their bikes in double-quick time. Some kids are capable of this, and some bum out after an hour or two. You may want to set a time limit at the beginning.

Not all kids are Earn-A-Bike types. Some will come in once, start a time card, and never show up again. Don't blame yourself for a high attrition rate. It's just a fact of life. The positive side of having drop-outs is that it only makes it that much more special when someone reaches the "magic 24."

Is there a life after Earn-A-Bike? Yes, there is. If your project is like ours, kids will keep coming to your shop long after they've taken their bike home. Many of them will be content just to earn more hours and boast about them to their friends, but you may institute some follow-up goals for the long-termers.

"HACKSAW" BY KEVIN GONZALEZ, AGE 11

Items of Wonder

When donations start rolling in, you'll get more than bikes. At RAB, people have donated tons of bike accessories, tools, parts, books, helmets, and even clothing. Take everything you can get, because if you can't use the stuff in the shop, it can always be "sold" to kids for Earn-A-Bike hours. Kids love being able to spend their hours on things, and it has the added benefit of providing them with valuable experience in budgeting an income. We've often heard kids thinking aloud along these lines: "Gee, I could get a water bottle today, but maybe I should add my hours to the bike."

One of RAB's most popular rituals began when George decided to minimize the inevitable chaos unleashed by a fresh batch of donations. He did this by having all the kids remain on one side of a table while all the goodies remained hidden on the other side. Then, he slowly presented samples of each product one at a time and extolled their virtues, a la the Home Shopping Network. Before an object was placed on the table, it was always introduced with the phrase "And the next Item of Wonder is..." The suspense of the process thrilled the kids and the name, silly as it was, stuck. It's not unusual for a kid to come into the workshop and say "Can we do the Items of Wonder?"

Earn-A(nother)-Bike

An ongoing surplus of "baby bikes" led to one of the most charming customs at I.S. 218. At their own request, kids started earning bikes for their little brothers and sisters. The bikes are so small and simple, and the thought so generous, that we make an exception in our 24 hour rule. Baby bikes can be had for a mere 12 hours of service. Some kids have also earned bikes for members of

their family older than themselves. Selfless projects like these should always be encouraged.

VII. Public Relations: Recruitment and Project Promotion

Recruiting Children

As we keep pointing out, kids love bikes. The incentive to learn is built into the project. Recruiting youth to participate in the project is rarely a problem. However, there are two procedures that should be followed in order to guarantee your success.

1) Establish requirements for access to the project and follow them. These requirements will be determined by the organization's mission and the partners it may have. Some examples of requirements:

- The child lives within certain geographical boundaries (many programs are intended to benefit low-income neighborhoods)
- The child participates in a certain organization
- The child pays a small fee (programs can offer scholarships to those who cannot afford it)
- Children of the same age are grouped together (older kids will sometimes dominate the others if not put in a mentor position)
- The child must demonstrate a certain level of competency to be placed in an advanced course.

2) Advertise the project in a timely fashion. Some organizations work with schools, youth agencies, and clubs that can provide you with a pre-selected constituency. Children can be selected by the youth organization, sometimes as a reward for their good behavior or because it fits into a theme that a particular group is developing. Other groups rely on posters and word-of-mouth in the neighborhood to announce this opportunity. Advertising far in advance will ensure that your project reaches its capacity and also allows families to plan for the activity. Demand may be high, so be prepared to announce dates of future classes and have sign-up sheets ready.

***Earn-A(nother)-Bike:** This young man has just earned a bike for his baby sister*

Recruiting Volunteers

The first place to appeal to when looking for adult volunteers is your partner organization, if you have one. Many of the same techniques used to enlist kids may be used to draw adults, but you may need to upgrade your materials a bit. Professional-looking posters and brochures will convince wary volunteers that they will be in good hands once they come through your door. Make it clear that your project is a worthy one and that the help of adults is important to its success.

Throughout its existence, RAB has been able to draw upon the resources of Transportation Alternatives, an organization that already enjoyed a broad volunteer base. TA publishes a magazine (formerly known as City Cyclist and now named after TA itself) six times a year

that not only goes to its membership, but is also distributed free at bike shops all over the metropolitan area. RAB's monthly column in the magazine regularly urges TA members and other cyclists to contribute time and materials.

Of course, there are other places to find volunteers. Pay some calls to bike shops, volunteer centers, senior centers, high schools, and sports clubs in your area.

But maybe you've gone through your partner organization, your community, and everyone in your little black book and you still don't have the volunteers you need. If so, it's time to appeal to a higher power.

Publicity

Good directors have an unrelenting drive to inform others about their project. Everywhere they go, they are constantly networking be- cause they know that the best contacts are usually made face to face. However, there's no denying that even a tiny bit of media attention can produce a quantum leap in the public awareness of a project. For this reason, you would be wise to put together a solid package of materials that presents your project in the best possible light. Your p.r. arsenal may include the following:

Every recycling begins with a careful inspection.

A Logo- People respond well to symbols. It's not absolutely essential, but a well-designed logo is like the Presidential seal: it lends authority. You may be thinking "Oo, we can have the kids design one!" Maybe so, but in our experience it's tough to get a usable final product with kids. You may get some valuable input from them, though, or even a drawing that you can incorporate into a logo.

Stationery- A well-run project is constantly sending out inquiries, appeals, thank-you notes, and grant proposals. A nice letterhead can make all the difference in making a first impression.

A Brochure- A project should have one good piece of material that tells a stranger everything they need to know. It should be clearly laid out, illustrated (pictures of kids are worth several thousand words), and succinct. It should also be easy to carry around, give to others, and stuff into a business envelope. Color and glossy paper are optional. A one- or two-sided 81/2x11 sheet can do the job quite well. RAB's ver- sion is a tri-fold of that size.

Press Releases- One of the easiest ways to make a bid for media attention. A release can be printed on your regular stationery and should always be about a special event. Start by building a mailing list of local media that includes newspapers, magazines, TV and Radio stations, and community newsletters. Try to mail them to specific individuals working for those media. A parent/partner organization might be able to pro-vide you with a ready-made list. If you're not already in operation, your first release should be about the grand opening of your project. Big bike donations (to or from your group), volunteer and bicycle drives, new corporate sponsorships, bike rodeos, and group rides can all be the subjects of successive releases. Writing effective press releases is a fine art, but the best advice we can give is to keep them short and sweet. Any- thing bigger

than one page is long-winded.

A Newsletter- This is a good way to keep your "membership" (if you have one) abreast of the project's activities. It doesn't have to be terribly elaborate, and it can appear infrequently (every three months is typical). A single, well laid-out sheet will do. Always include illustrations, either of, or by, kids.

Posters- Not as essential as a good brochure, but they can be useful. Posters are better for targeting the community than the media, but check local ordinances before plastering them on walls all over your neighborhood. You might find that a leaflet will suit your purposes better, mainly because they can be posted on bulletin boards. In New York, the best places to get posters and leaflets displayed is in the windows of kindly retailers; in particular, coffee shops and Laundromats.

Videotapes- Not too long after we opened Alan Lowe, the host of a local public-access cable TV program called The Bike Show, shot a 15- minute segment about RAB. As a videotape, it became a useful tool. If an influential person was curious about our project, all we had to do was send them a copy. If you've got a video camera, you might try shooting a mini-documentary about your project. Once again, keep it short. Noth- ing is more boring than a long, homemade video.

A press kit- File away a copy of every article published about your project. After you've got a few good ones under your belt, you can start packaging them (and your other materials) in folders to give to media people and other VIP's.

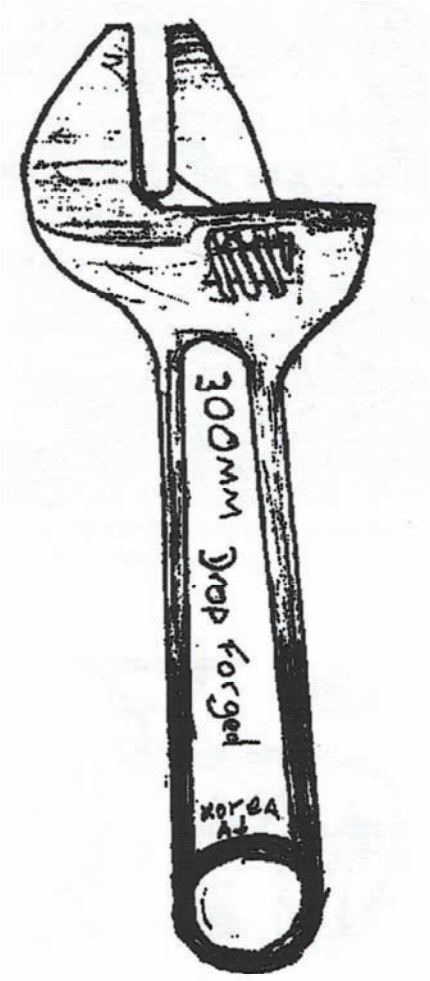
Merchandise- We think it was the late Fred LeBow, the man behind the New York Marathon, who said, "Never underestimate the power of a free T-shirt." The gift of a nice, thick, 100% cotton tee with a snazzy logo on it can go a long way toward cementing a friendship. They can also be a great incentive award and status symbol for the kids. Caps are great, too, but they usually cost more.

VIII. Finding the Funds

Fund-raising is practically an industry unto itself in our country. The competition is so fierce for the dwindling supply of endowments that elaborate strategies have been evolved and many people have made a career of it. Most organizations cannot afford to pay the salary of a professional fund-raiser, though. This responsibility usually falls on the board of directors, or equivalent body, who should be selected for their ability to perform in this area. However, projects like our own do not necessarily rely on their board, and have proven to be very resourceful in finding ways to raise money.

There are many sources of project income: state and local government, foundations, corporate sponsors, private donors, special events, fees, and bike sales and repairs. The appropriate source of funding depends on whom the fund-raiser feels most comfortable in approaching or the style that those people are accustomed to.

The obvious first step in your fund-raising strategy is to find out



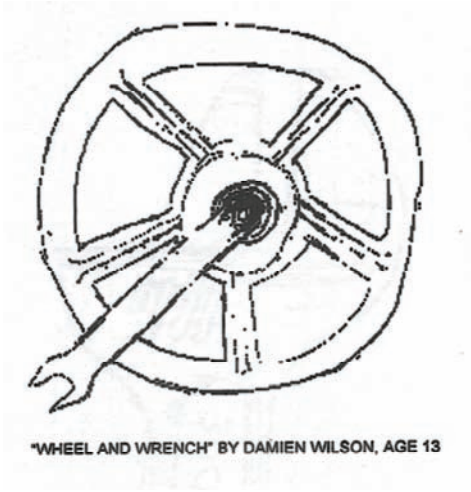
"ADJUSTABLE WRENCH" BY HECAR MALDONADO, AGE 13

how much you need. Work out your annual budget. It should include rent, utilities, salaries, shop tools and supplies, transport costs, general office expenses, and publications. Don't exaggerate costs, but don't undercut yourself, either. You can cut corners later on. For now, set down on paper the project you want.

Once you've determined your bottom line, you can decide on the level at which you're going to raise funds. Be warned: applying for grants is a time-consuming, laborious project that will require a considerable amount of research and a lot of writing. It's also a gamble. An ironic truth about grants is that once you've received one, other funding agencies are more likely to give you additional ones. A few of the successful fund-raising approaches are listed below.

State & Local Government

Most government agencies have a little extra money beyond their operating expenses that is earmarked for the community. It's important to find sympathetic government officials who like your project and may even adopt it. Once they do that, they can help channel some of those funds into your project. Here are some agencies that have supported bicycle recycling projects, with the respective areas in which each can be wooed:



"WHEEL AND WRENCH" BY DAMIEN WILSON, AGE 13

- **Department of Youth-** After-school programs, minority programs, technical education
- **Department of Juvenile Justice-** Crime prevention
- **Department of Education-** Environmental education, service learning, vocational education, industrial arts
- **Department of Sanitation-** Recycling & reuse
- **Police Department-** Community affairs, traffic safety
- **Parks and Recreation-** Summer programs
- **Department of Transportation-** Bicycle program, traffic safety

* /n

Foundations

There are quite a few foundations in existence, far too many to be listed here, whose sole purpose is to give away money. Your best resource for foundation-hunting is the Public Library. There, you'll find the books listed in our bibliography, and more. It will take time to identify the foundations that give in your geographic area and best match your project's interests. After you compile a list of target foundations, write each of them a letter requesting their guidelines. When making your proposals, be very scrupulous about meeting the foundation's requirements and time frames. Successful proposals tend to fall under the categories of environment, youth, and employment generation.

Corporate Sponsors

A smart business is involved in its community. For this reason, corporations based in your area are interested in supporting effective projects. Large corporations may even have a foundation of their

own. Once again, you can find directories in public libraries that list where grants are given and in what fields of interest. Smaller corporations may be approached through their public relations divisions. Local businesses may be approached individually or through a local business network like the Rotary Club or your local Chamber of Commerce. Bicycle-related businesses and manufacturers may be more sympathetic, but don't rule anyone out.

If you are lucky enough to acquire a corporate sponsor, be sure to acknowledge their support as often as possible. Mention them in your literature, flyers, public speeches, etc. And, of course, support their business in the community.

Private Donors

As you grow, you should create a base of support for your activities. Most organizations encourage individuals to become members in exchange for a newsletter, a tax exemption, and the knowledge that they are supporting a good cause. A membership base is important for two reasons: it creates a steady source of income and it provides a pool of interested people with whom to network. People who give over one hundred dollars should be recognized in a special way (i.e. given a T-shirt, a tour, a lunch date, special thanks in a newsletter or brochure, or any combination of these). If your board members or trustees are well-connected, they should be encouraged to identify and solicit donations from wealthy individuals.

Special Events

There are many types of events that can be organized to raise money. Relatively easy events include bike raffles and T-shirt sales. Bigger affairs, that require a major volunteer effort, can include a bike-a-thon, an auction of bikes repaired by the project (or even bikes painted by young artists), and a flea market of unsold goods that bike shops want to sell at a discount. If a local street fair or festival is in the offing, it might be a good idea to acquire a booth or tie an event to it.

Educational Fees

Education has value. If your instructors are good and your shop is well-equipped, you can generate extra income by teaching adult classes, particularly if there are a lot of bike enthusiasts in your area. A lot depends on location. Because most projects work in low-income communities, fees for their bike repair classes do not reflect the real cost. In fact, some projects don't charge anything, using the classes to promote their mission and recruit volunteers.

Bike Sales

By now you may be standing in your chair screaming "You're resurrecting bikes! Why not make money by selling them and skip all this 'fund-raising?'"

RAB does sell bikes. New Yorkers are constantly on the lookout for old, beat-up commuting bikes that are less attractive to thieves than new ones. RAB is able to supply this demand very well, but we don't depend on sales for income for several reasons.

Number one, the bike business isn't that lucrative. For reasons

From the notebook of Leonardo da Vinci, ca. 1493

KAREN OVERTON

Maaret Klaber, RAB's only "home school" student, comes in once a week.

From the notebook of Maaret Klaber, 1995

best known to the major manufacturers, new bicycles have a far lower profit margin than almost any other division in retail. To make matters worse, bikes come unassembled, which raises the overhead even further. Despite prices that seem high to consumers, dealers make most of their money from parts and accessories. Used bikes must compete within these conditions of the marketplace as well, and have the added burden of being very labor-intensive to restore. It's easy to spend an entire day fixing up a bike that wouldn't sell for more than $75.

Two, a bike shop staffed by kids and teens just can't be efficient enough to produce the number of bikes that would pay all our expenses. Even if it could, the pressure to produce would change the character of our shop drastically. Sooner or later, the emphasis would be on quantity, rather than quality. It would stop being fun, for us and the kids.

Three, the primary goal of RAB is education. It's important for us to put bicycles back into action, but our main objective is to instill an environmental consciousness and foster mechanical and social skills in kids. We're concerned that placing a premium on production would violate certain principles of the educational process (not to mention child labor laws!).

That's the RAB philosophy, but your project does not necessarily have to follow our model. If we hadn't been so fortunate in securing funding, we wouldn't be able to operate on such a "pure" level. And in the face of continued corporate and government belt-tightening, no one knows how long we can continue to do so. If our funding level drops, we'll certainly sell more bikes to meet the shortfall.

It appears that most existing projects depend on bike sales for a good part of their operating expenses. If you go this route, just remember that you'll be starting a business, and will face all the obstacles that are a part of that process. The project would also raise the specter of liability, which we'll cover in the next section.

Bike Repairs

It's inevitable: start fixing up old bikes somewhere and people will start knocking at your door asking if you can fix their bikes. Well, why not? At RAB's I.S. 218, it started within the school. Many of our kids already had their own bikes, so we designated an afternoon as Fix-Your- Own-Bike time (it should be noted that kids can't "earn hours" during F.Y.O.B.). After a while, kids who weren't in the project began asking about repairs, followed by parents and teachers. We couldn't refuse them, but we did set up some guidelines for taking in repairs.

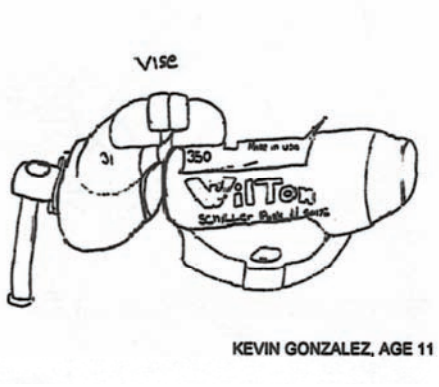
We started by creating a special "repair ticket," which had a space for a customer's name, address, and phone number. At the bottom, there was a box labeled "estimated cost" that totaled the price of the repairs if they had been done at a "real" bike shop. There was also a box labeled "actual cost" which was lower than the estimated cost. When a person received their bike back, we'd point

out the amount of money they saved. On a typical job, for example, if the estimated cost was $43.00, we'd probably charge $20.00.

Why so low? For one thing, I. S. 218 is in a very poor neighborhood. For another, RAB does not try to be a "real" bike shop. We don't sell new bikes or parts. If a component can't be repaired, the replacement will undoubtedly be a used one.

In some areas, care must be taken when implementing a bike repair policy. You may risk losing the friendship you've been cultivating at the comer bike shop. The closest shop to I.S. 218 was a half-mile away (a long-distance in Manhattan), so we didn't feel we were encroaching on someone else's territory. Our little "business" never became very large because we didn't publicize our policy. If a merchant begins to grumble, it should be explained that by fostering interest in cycling, your project will, in the long term, probably increase his or her business.

In RAB's case, money taken for repairs is always treated as a donation. Our "customers" receive a Transportation Alternatives membership along with their repair. It actually raises the value of the repair because cardholders receive a subscription to TA's magazine and are entitled to discounts at many NYC bike shops.



KEVIN GONZALEZ, AGE 11

IX. Safety, Quality Control, and Liability

(Protecting participants, Protecting bicycle recipients)
Your project has to do everything in its power to prevent injuries to your students, either from working on bikes or riding them. Not only that, you must safeguard anyone who receives a bike from your project, whether they are kids or adults. We'll cover these two levels separately, starting with the kids in and around your workshop.

Protecting Participants

RAB's first priority is to ensure the safety of kids who are handling tools and repairing bikes. Rules for safety are constantly laid down during the teaching and throughout the kids' involvement with the project (don't throw tools, don't run with them in your hands, don't use a wrench for a hammer, etc). Always be firm in the enforcement of rules, and post them on signs visible throughout the shop.

One blessing of bike repair is that almost no power tools are required to practice the craft. The only one that could be considered a necessity is a drill, and even then, the need for it is infrequent. When working with pre-teens, we strongly suggest that power tools only be used under the direct supervision of an instructor.

In nearly two years of operation, there has only been one injury. A boy was working underneath a bike and dropped the screwdriver he was holding onto his forehead, causing a nasty little gouge. It wasn't serious, but for us it was one wound too many.

Safety equipment

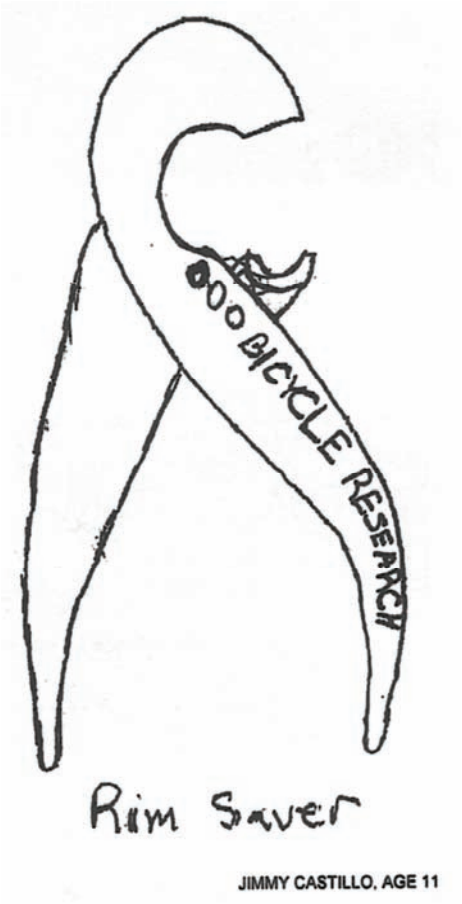
It's a good idea for your shop to have a few items available to

prevent injuries. Wearing goggles or more comfortable safety glasses is very wise when doing any kind of metal work. We think it's a bit excessive to require them at all times, but they should be a must when hammering or drilling.

We use heavy rubber gloves mainly when working with solvents, but you may want to have some of the standard cloth 'n' leather workman's variety around for loading, unloading, and general organizational work.

Our kids mainly need them to keep clean, but aprons are actually a good safety measure, especially if they're made of sturdy cloth. They make the most sense in summer-time, when kids are likely to have bare legs.

You're not going to be able to prevent every nick and cut, so a well-stocked First Aid Kit is an essential item. Mount it on a wall so that everyone knows where it is and can access it quickly.



JIMMY CASTILLO, AGE 11

Traffic Safety

Kids encounter the greatest risks on their bicycles. Safe-riding skills are covered in our classes, but without a real riding program, we're limited in the amount of training we can do in this area. There's no substitute for a responsible adult who can take kids out on the road and actually show them how to ride safely.

Many groups have a successful ride program and some, like California's Trips for Kids, make it a specialty. If you're planning to include rides in your program, or even if you want to teach riding properly, there is a lot of information available. Start collecting it by contacting local advocacy groups. Your next stop should be your state Department of Transportation, which may have a division devoted to bicycles. The League of American Bicyclists has adopted John Foresters' Effective Cycling philosophy and will offer clinics on request. If you can afford to spend a little money, Seattle-based Outdoor Empire Publishing offers some excellent publications designed for youth. These books are up-to-date, easy to read, and can even be used as texts in a bicycle-education class.

Helmets

The very best thing you can do for your kids is to get them wearing helmets. Twenty years ago, this would have been a real uphill battle. Helmets have come a long way since then. They're much lighter, come in a wide variety of sizes and colors, and have gained much greater acceptance at all levels of society.

Still, in a gritty, urban setting, helmets can be extremely "wack" or uncool. Even though NYC officially has a helmet law for kids under 16, it's not strictly enforced and few "street" kids can be seen wearing them. I. S. 218 is in a tough neighborhood, an area where kids can get beat up for not wearing the right clothes, or even for wearing them. Students have actually shown up for school in their socks after having their sneak- ers stolen from them.

In surroundings like these, it's tough to persuade kids to wear helmets, but we've made inroads. We frequently mention their importance, set examples by always wearing them, and make them

available for only two hours of shop service. When George returned from a long cycling trip in which he had been struck by a car, he made a point of telling the kids that his life was probably saved by his helmet. Our greatest progress was made, however, after a donor provided us with a substantial number of flashy, fashionable helmets in bright colors and patterns.

Make helmets a key part of your program. If you're going to give away bikes to kids, it's your responsibility to make them available to every kid who's enrolled. This may be one of the easier things for which to receive financial aid. Community health programs, civic clubs (like the Kiwanis and the Rotary), police and fire departments, and local hospitals are all potential donors of helmets or the money to buy them. Bell Sports has a Cycle Right Community Helmet Program that offers helmets at a substantially reduced rate to groups that work with children.

Donated helmets await new owners.

Bike Rodeos

One way to combine safe-riding education with fun is by organizing a bicycle rodeo, an outdoor event in which kids compete for prizes based on their riding abilities and knowledge of traffic safety. See our bibliography for publications about putting on such events.


Volunteer Bronwen Mauch performs a helmet fitting.

Protecting Bicycle Recipients

Maintaining the quality of the work

A certain amount of "messing around" with bikes is tolerated and even necessary at RAB, but when it comes to bikes leaving the shop, a high standard of workmanship is imposed.

When a bike enters the shop a special green "Check-In and Diagnosis" or "work" ticket is made out and attached to the handlebars. Modeled after ones used at pro bike shops, the ticket is a pre-printed inventory of the major parts of the bike with blank areas left for noting the required work (a copy of it can be found in the appendix). Each line ends with a check-box. A senior staff member appraises the bicycle and fills out the blank lines. This first inspection is crucial. Major problems can be identified before the bike goes into the kids' hands. It is also at this stage where bikes with irreparable frame damage are spotted and slated for cannibalization instead of recovery.

The processing time varies considerably from bike to bike. Sometimes a bike is turned around in 24 hours. Sometimes it hops from workstand to workstand for weeks. Throughout the process, the ticket remains on the bike and the check-boxes are filled in as the tasks are completed. Each procedure performed by kids is inspected by an older mentor or staff member. When the row of check-boxes are filled in, the bike is ready to receive its final inspection.

Final checks

Once again, the presence of a professionally trained mechanic is invaluable. Such a mechanic inspects all the work, performs the final adjustments (there are always a few) checks the critical nuts and

bolts for tightness, and spots any problems that might have been missed. He or she takes it on a test ride, which usually uncovers some additional irregularities. After correcting them, the mechanic/instructor removes the work ticket, signs it, and files it.

A new, orange ticket is now attached to the bike. It says "This Bike Has Been Recycled," and has spaces in which to record the make and model, the serial number, the size, the date of completion, the estimated value of the bicycle, and its final destination. The use of differently col- ored tickets make it possible to tell at a glance which bikes are complete and which still need work. Orange tickets also function as price tags for browsers.

Records and Waivers

When a bike finally leaves the shop, the orange completion ticket is removed and stapled to the original work ticket. Both tickets are filed away.

RAB keeps every ticket for every bike that's ever been worked on in the shop. Keeping tight records makes it possible to monitor the project's progress very precisely. Our ticket works well for us, but some shops may find it useful to include an "hours spent on bike" line on tickets for further analysis of their project's efficacy.


GRB

Another good reason to maintain records is for self-protection. If a bike recipient ever charges the project with negligence, the ability to produce a completed and signed work ticket may help settle the dispute.

There is one form that many projects add to the recycling process: the waiver. The waiver is a piece of paper signed by the bike recipient that acknowledges the bike they are about to claim is used and carries an unavoidable element of risk. An organization in upstate New York called Recycle Ithaca's Bicycles has a waiver that baldly states: "RIB'S bikes are not guaranteed. They are used and have not been fixed by professionals. They may have old, broken, or badly put-in parts." That paragraph certainly covers a lot of ground.

Insurance

Unfortunately, all the safety checks and rules in the world don't seem to be enough in a society as litigious as ours. In a well-publicized case, a woman who spilled hot coffee in her own lap while driving a car sued McDonald's and actually won (one of our correspondents thinks the woman should have sued her car). Obviously, anyone who seeks to have any kind of business needs extra protection. The only way to get it is through an insurance company.

Start your research into this area with your parent/partner organization. See if they have a plan that will cover your activities. If not, perhaps you could be included through the payment of additional premiums. Expanding an existing plan may be cheaper than having one custom-made for you.

Project directors should be forewarned that insurers sometimes over- react when bluntly told that a project will have "kids fixing bikes and selling them to people." Try to employ more finesse and get them on your side first. If they find the concept of your project

appealing, they may find a way to make insuring it possible. Don't be discouraged if you get a few "no's" from insurance companies. Somebody, somewhere, will take you on.

For over a year, RAB operated under the assumption that it was covered by TA's insurance policy. The wording of the policy appeared to include any bikes that were repaired under a TA project. In the Spring of 1995, however, Karen was informed by the insurer that this was not the case. When TA's Board of Directors heard of this, they suspended sales until a new company could be found to cover RAB. For several months, Karen searched and encountered one negative response after another. Many said they would "never" insure such a program. Finally, a contact with the League of American Bicyclists led to a sympathetic insurer. The National Insurance Professionals Corporation is now insuring RAB's four sites for an annual fee of $2000.

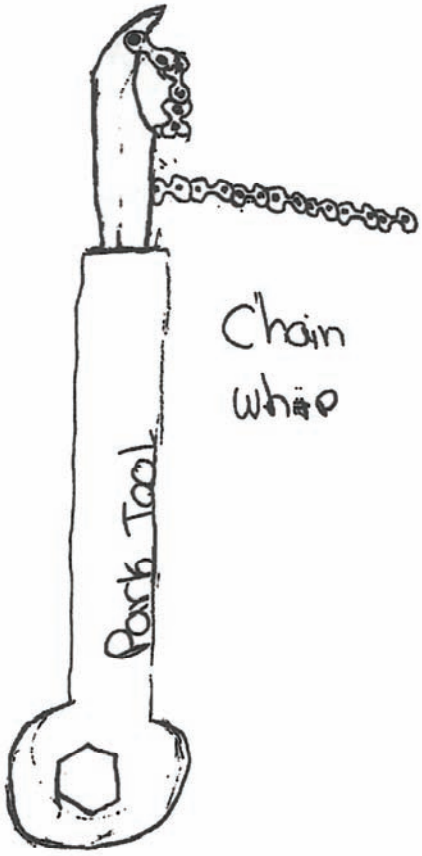
Last Words

You've decided to take on a project that works with children. Not only that, the success of the project depends on them. If you haven't done it before, you're going to find that the kids are going to constantly irritate, embarrass, disappoint, and infuriate you. At the same time, they will also charm, amuse, surprise, and impress you.

You, on the other hand, are going to set standards they can't possibly keep, demand their attention constantly, set a thousand niggling rules, and scold them regularly. You will also give them the most valuable commodity a child can have: a guiding hand. They'll keep coming back for it. We've found recycling bicycles with kids to be intensely rewarding. We hope you will, too.

This manual has touched on a lot of areas. If it seems a little daunting by this point, don't be discouraged. As we said in the beginning, start small. The elements we've discussed don't necessarily all have to be in place on day one. The basic ingredients are kids and bikes. If you've got those two, you're halfway there.

Good luck!



FERNANDO, AGE 11

RESOURCE DIRECTORY

As a fledgling bicycle recycler, you may sometimes feel that you're the only one carrying the banner. Not so! A network of projects across the country already exists and most of them are ready to share experiences and offer advice. Most of the groups on this list are affiliated with the **Youth Bicycle Education Network,** which is also listed below. Much of this information has been distilled from YBEN's directory and we thank them for the use of it.

BICAS
P.O. Box 1811
Tucson, Arizona 85702
(520) 628-7950
Contact: Kim Young

Youths earn bikes they repair in workshops at multiple community center sites. BICAS has partnerships with bicycle cooperatives in Mexico. They also have a "yellow bike" program.

Bicycle Action Project
2256 North College
Indianapolis, Indiana 46205
(317) 931-9893
Fax:(317)687-0927

Contact: Nancy Hart, Tina Harnett
Earn-A-Bike, mechanics and safety training, a BMX racing team, overnight cycling trips, and a retail shop that employs student-trainees.

Bicycle Education and Enrichment Program (BEEP)
13b Indian NeckAve
Branford CT 06405
(203) 488-8463
E-Mail: pdhct@aol.com
ContactPaul Hammer

Adventure/discovery rides, repair workshops

The Bicycle Experience
3074 Portsmouth Ave.
Cincinnati, Ohio 54208
E-Mail: selfml@aol.com
Contact: Mike Self
Earn-a-Bike for 11 to 15 year olds.

BicycleWORKS
4102 Shenandoah
St. Louis, Missouri 63110
(314) 664-0828
Contact: Roy Bohn

"Earn-A-Bike, maintenance and safety training, bike repair apprenticeship, bicycle touring, Scholar Bike (incentives for progress in school) and a retail shop."

Bikes Not Bombs
59AmorySt.,#103-A
Roxbury, Massachusetts 02119
(617)442-0004

Contact: Mira Brown, Carl Kurz
BNB is best known for its work in Nicaragua, but has operated its Boston-based Bicycle Recycling and Youth Center since March, 1994. Eam-A-Bike, repair classes, teen vocational training, summer programs, and more.

Bike Traffic
1418 Turk Street
San Francisco, California 94115
(415)776-2330
Contact: Melvin Watson

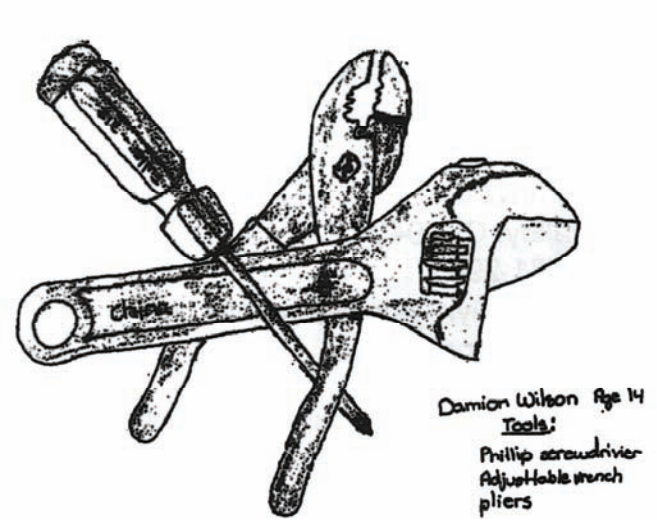
An inner-city youth bicycle mechanic's training program. They also have a summer youth employment project that maps cycling conditions in The Presidio.

Blackstone Bicycle Co-op
6100 S. Blackstone Ave.
Chicago, Illinois 60637
(312)241-5458
Contact: Andrew Gregg
Cooperative workshop, youth education program, and mobile bike shop. "The Bike Co-op provides space for the imagination."

Center for Appropriate Transport

455 W. First Ave.,
Eugene, OR 97401
(503) 343-5568 or 683-3397
Fax: (503) 686-1015
E-Mail: janvdt@aol.com
Contact: Jan Vander Tuin

Repair classes, weekly field trips, and a unique, kid-run small business called Eugene Rack Works that designs and sells welded steel bike racks to the community.



The Community Bicycle Network
340 Harvard St.
Toronto, Ontario M6G 1 H4
(416) 536-7999
Fax:(416) 960-0026
Contact: Gillian Kranas

The CBN was formed in 1993 to help develop a network of bicycle repair and recycling clubs. Their mem ber projects include four established workshops (there's one just for women), two mobile "Workshops on Wheels," (one is a van, the other a bicycle trailer) and "Songcycles," a choir on bikes. Their oldest member project, formed in 1990, is the Cabbagetown Bike Club (416)363-4234.

The Community Cycling Center
2407 NE Alberta
Portland, Oregon 97211
(503) 288-8864
Fax: (503) 288-1812 (Call first)
Contact: Brian Lacy
E-Mail: comcycl@teleport.com

"A Bicycle Riding and Repair School for Kids" that actively promotes riding with group events and a Bike-to-School-and-Back program. CCC also runs Leam-a-Bike (equivalent to our Eam-A-Bike), adult repair classes, community repair services, and a teen vocational training program. They have also created an English/Spanish repair manual.

Handlebar Helpers
7340 Scottsdale Mall, Pepper-wood Bldg.
Scottsdale, Arizona 85251
(602) 994-2337
Contact: Terry Erickson
Volunteers and youth apprentices repair and tag bikes with an "hour price." Adults and kids alike can earn bikes through community service.

La Cueva
695 Center St.
Costa Mesa, California 92627
Contact: John Levere

Adventure ride program; outdoor education

Major Taylor Cycling Club
P.O. Box 9357
Palo Alto, California 94309-9357
(415) 475-3525
Fax:(415) 329-9462
Contact: Ann O'Neill

Mobile repair workshops, rides.

Minnesota Pedal Power Camp
340 Coffey Hall
University of Minnesota
St. Paul, MN 55108
(612) 625-9719
Contact: Cynthia Macarthur

A camp for cycling skills and advocacy. Camp graduates make presentations in local communities.

Pedal Revolution
3075 Twenty-first St.
San Francisco, California 94110
(415)641-1624
Contact: John H. Scheffer

Pedal Revolution offers a bike repair apprenticeship, for homeless youth. They also receive housing and job placement assistance.

Project Wheel
Northern Illinois University Dept. of Leadership Education and Policy Studies
DeKalb, Illinois 60155-2866
(815) 753-9341
Fax:(815) 753-1513
Contact: Richard Tapia

"Trains people to lead a challenge-based experiential education program using the bicycle as a 'metaphor for understanding self-potential." PW also offers a "five-week course for at-risk youth" and "certification and academic credit in alternative teaching methodology"

Recycle/Cycles
Room 125
General Services Complex
University of Waterloo
Waterloo, Ontario
Canada
(519)888-4882
Contact: Jennifer

Recycle Ithaca's Bicycles
309 Corn St.
Ithaca, NY 14850
(607) 256-5355, (607) 277-5675
E-mail: ruina@cornell.edu
Contact: Andy Ruina

Recycled bikes earned through community service hours, bikes shipped to Central America.

Transportation Alternatives
115 West 30th Street #1207
New York, N.Y. 10001
(212) 629-8080
Fax:(212) 629-8334
E-Mail: info@transalt.org

A 4,000 member NYC-area citizens' group that works for better bicycling, walking, public transit, fewer cars, and, of course, runs Recycle-A-Bicycle.

Transportation Options
2335 Wallen Rd.
Moscow, Idaho 83843
(208) 882-9698
Fax: (208) 882-8029
E-Mail: peckh771@uidaho.edu
Contact: David Peckham

Bike recycling and Earn-a-Bike workshops.

Trips for Kids/Recyclery
138 Sunnyside
Mill Valley, CA 94941
(415) 381-2941
E-Mail: marilyn_price@marinfo.org
Contact: Marylin Price

Organizes mountain bike trips and environmental education classes. Also, bicycle maintenance education programs, a retail shop, and a drop-in center. TfK is said to have a "very successful bike swap meet."

Union City Teen Workshop
34009 Alvarado-Niles Rd.
Union City, CA 94587
(510)471-3232
Contact: Larry Orozco

A project of the Leisure Services Department of the City of Union City. "Teen mechanics operate a bicycle service shop for the community. Bicycle rodeos and Build-A-Bicycle workshops are also sponsored." The program has been in operation since 1972.

Urban Youth Bike Program
300 Cathedral Parkway
New York, NY 10026
(212) 939-4005, (212) 866-4689
Contact: Landon Wickham

At-risk youth earn school credit in bike repair, community service, and ride programs. A "Service Learning" model.

Wheels for Winners
4547 W. Beltline Highway
Madison, Wisconsin 53711
(608) 273-4787, (608) 266-6225

E-Mail: aross@ci.madison.wi.us
Contact: Arthur Ross
Earn-A-Bike and mechanics training. "Strong connections with local government and the Retired Senior Volunteer Program." Mr. Ross is Madison's Pedestrian-Bicycle Coordinator

Youth Bicycle Education Network
4579 Laclede Ave. #248
St. Louis, M063108
E-Mail: yben@aol.com
Contact: Vicki Winters
"An international organization which supports teaching youth skills and values through bicycles. RE:Cycle (YBEN's quarterly publication) reaches out to involve kids, volunteers, educators and bike dealers by keeping them up-to-date on YBEN projects."
Other useful addresses:

National Safe Kids Campaign
111 Michigan Ave NW
Washington, DC 20036-2970
(202) 884-4993

Bicycle Institute of America/ Bicycle Federation of America
1818R Street NW
Washington, DC 20009
(202) 332-6986
(202) 332-6989

A coalition of bicycle-related industries formed to promote bicycle education.

Bibliography

Bicycle Books

Bicycle Institute of America. Bicycling Reference Book. Washington D.C.: BIA. A bi-annual booklet produced by a coalition of bike-related businesses. Full of good information.

Bicycling Magazine. Complete Guide to Bicycle Maintenance and Repair. Emmaus, PA: Rodale Press. A good all-around guide with clear illustrations and text.

Brandt, Jobst. The Bicycle Wheel. Menio Park, CA: Av- ocet, 1981. Want to learn how to build wheels? Get this book.

Coles, Clarence W., and Harold T. Glenn. Glenn's New Complete Bicycling Manual. New York: Crown, 1987. Despite the word "New" being tacked onto this reprint's title, much of the material in this old classic is quite dated. However, it includes detailed instructions on the overhauling of3-speed and coaster hubs.

Coello, Dennis. The Mountain Bike Repair Handbook. New York: Lyons and Burford, 1990. All-Terrain bicycles are evolving so fast that this book is out of date already. But so is everything else.

Cuthbertson, Tom. Anybody's Bike Book. Revised, Ber- keley: Ten Speed Press, 1990. A "folksy" guide to bike repair. Plain english, cute drawings.

Forester, John. Effective Cycling. Palo Alto, CA: Custom Cycle Fitments, 1975. Revised, Cambridge, MA: MIT Press. Revised 6th Edition, 1993. All about riding safely.

Outdoor Empire Publishing. Bicyclists Guide, Team Helmet, and The Best Bicyclist on Earth. Instructional booklets for children.

Perry, David B. Bike Cult: The Ultimate Guide to Human Powered Vehicles. New York/London: Four Walls Eight Windows, 1995. An encyclopedic history of the bicycle in all its forms. Includes a bibliography that puts this one to shame.

Sutherland, Howard. Sutherland's Handbook for Bicycle Mechanics. Berkeley, CA: Sutherland Publications, 1974. Fifth edition 1990. A big, expensive book found in every serious bike shop. Believe it or not, it isn't that essential. It's most useful for determining spoke lengths and thread sizes.

Talbot, Richard P. Designing and Building Your Own Frameset. Babson Park, MA.: The Manet Guild, 1984. If nothing else, this book will give you a healthy respect for the difficult craft of frame building.

Transportation Alternatives. Bicycle Blueprint New York: TA, 1993. A vision of how cycling could transform a big city. Specific to NYC, but of interest to urban planners everywhere.

Periodicals

Bicycling Rodale Press, Emmaus. The oldest, biggest mainstream cycling magazine.

BMX Action Torrance, CA. Good for keeping up with current trends in kid's bikes...which are not just ridden by kids, we've found.

Dirt Rag Verona PA. East Coast coverage of the off-road scene. Most original covers, most irreverent writers.

Mountain Bike Rodale Press, Emmaus. From the folks who bring you Bicycling.

Mountain Bike Action Mission Hills CA. Mag most likely to use the word "gnarly." Decent tech articles.

RE:Cycle YBEN. The newsletter of the Youth Bicycle Education Network. A must for bike-recyclers.

Spoke and Word Bikes not Bombs, Jamaica Plains, MA. Newsletter from BNB, a bike-recycling group.

Transportation Alternatives The bi-monthly magazine from the organization of the same name. NYC-focused bicycle activism covered in detail.

Films and Videos

Bicycle 1991, UK, York Films. This 2-hour documentary produced by the BBC and PBS is the best history of the bicycle on film.

Bicycle Safety Camp 1990, Injury Prevention Program. An instructional video on safety with songs you can't get out of your mind (unfortunately).

Breaking Away 1979, Peter Yates. The best fictional film about a racing cyclist ever made.

Fundraising

Environmental Grantmaking Foundations This has been called the "best, most comprehensive source" for fundraisers in our field. It can be ordered from Environmental Data Resources, 1655 Elmwood #225, Rochester, NY 14620. Phone: (216) 473-3090.
National Databook of Foundations For all the other foundations. The Foundation Center is located at 79 Fifth Ave., New York, NY 10003. Phone: (212) 620-4230.

Appendix I

Financial and administrative information about RAB

Recycle-a-Bicycle Job Descriptions

JOB DESCRIPTION: PROJECT MANAGER

Period of Contract: 12 Months
% Time: Full time
Salary: $25,000

This job entails the responsibilities associated with organizing and managing a recycling program for bicycles. This will be achieved through the coordination of a recycling program with the Children's Aid Society and with T.A. members. The project manager will be responsible for two sites (Washington Heights and St. Marks Place) and will be expected to expand the program to other areas of the city.

Responsibilities:

* Recruit volunteers for recycling and coordinate their activities.
* Organize repair workshops for Children's Aid Society and T.A. members: schedule times, assist in curriculum development, assist head mechanic in workshops, advertise among T.A. members.
* Organize and manage bicycle collection system:
    o Collection: Identify sources of bicycles working with community organizations, NYC recycling, sanitation and housing programs, T.A. members, CAS, IS 218
    o Storage: work with CAS, IS 218 and head mechanic to store donations
    o Processing: Collect information regarding model, style, size, serial #, condition of bicycles and develop database to organize this information. Organize and manage bicycle distribution system (includes donation and sale of bicycles):
    o Recycling: Coordinate the repair of bicycles with the head mechanic and collect data on the time and parts required for repair and document final destination of bikes and parts
    o Sale of bicycles: Facilitate the establishement of IS 218/CAS youth managed small business to sell 20% of recycled bicycles.
    o Distribution of Bicycles to Community Organizations: Work with CAS/IS 218/MBPO to identify organizations interested in receiving donations; set up application process; collect and process data on how these bicycles are utilized
* Manage donor database & "thank you" system
* Write reports for grants
* Assist in fundraising for future activities
* Run media campaign - press releases, articles
* Study idea of TA repair collective and organize if viable
* Expand recycling program to new sites

JOB DESCRIPTION: INSTRUCTOR AND HEAD MECHANIC

Period of Contract: 12 months
%Time: 16 hours/week (2 full days)
Salary: $20/hour

This job includes the responsibilities directly related to the education of youth in bike mechanic skills and to the technical aspects of the recycling activities. Both tasks require an expert knowledge of bicycle mechanics and a demonstrated ability to work with children.

Responsibilities:

* Organize workshop space:
* Develop floor plan
* Coordinate construction of work areas with CAS/IS 218
* Order tools, parts, and materials for workshop
* Repair and Maintenance Workshop:
* Develop curriculum with Project Manager
* Instruct Repair and Maintenance Workshop
* Orient selected C.A.S. teens to assist in Repair and Maintenance Workshop
* Diagnose bicycle donations, tagging them with a list of repairs or designating them as "good for parts only"
* Oversee the repairs done by children and volunteers
* Inspect all recycled bicycles for safety check before distribution or use in bicycle safety/recreational rides
* Coordinate inventory of material donations and track use for project report
* Fundraising: Assist in preparation of bikes to sell, and inspect all that are sold before leaving the Washington Heights workshop

JOB DESCRIPTION: HARLEM INSTRUCTOR AND EARN-A-BIKE COORDINATOR

Period of Employm't:	12 months
% Time:	Instruction - 10 hours for 36 weeks (Tuesday/Thursdays)
	Earn-A-Bike - 6 hours for 12 months
Salary:	$10/hr

This job includes responsibilities directly related to the education of youth in bike mechanic skills and to the technical aspects of recycling. These tasks require an excellent knowledge of bike mechanics as well as experience working with children.

Responsibilities:

* Organize Harlem workshop space:
* Develop floor plan
* Coordinate construction of work areas with PS 109
* Submit lists for procurement of materials to Project Director
  Instruct 8 Repair and Maintenance Workshops
* Coordinate curriculum innovations with PS 109 teachers
* Oversee selected teen interns for Repair and Maintenance Workshop
* Work with Head Instructor to select bikes from Washington Heights for project site in Harlem
* Take inventory of bikes, tools and supplies at Harlem
* Diagnose bicycle donations, tagging them with a list of repairs or designating them as "good for parts only"
* Oversee the repairs done by children and volunteers
* Inspect all recycled bicycles for safety check before distribution or use in bicycle safety/recreational rides
* Fundraising: Assist in preparation of bikes to sell and do safety inspection of all bikes before leaving Harlem workshop

Recycle-A-Bicycle 1996 Budget
Projected Expenditures

* Project Manager	$ 25,000
* Executive Director @ 5%	$ 1,500
* Administrative Director	$ 2,000
* Workshop instructors	$ 8,000
* Graphic Design/Editor	$ 1,500
* Five new work stations	$ 2,500
* Tools and Supplies	$ 12,000
* Printing	$ 5,500
* Overhead	$ 6,900
* Insurance	$ 2,000
* TOTAL	$ 66,900

Projected Sources of Income

* 1996 Environmental Protection Agency	$ 13,000
* Liz Claiborne Foundation	$ 8,000
* Bike Sales	$ 6,000
* Manhattan Borough President's Office	$ 2,000
* Bike Aid	$1,000
* Other sources*	$ 36,900
* TOTAL	$ 66,900

Pending Proposals: AT&T Foundation, the Barker Welfare Foundation, Ben & Jerry's Foundation, Chase Manhattan Bank, Consolidated Edison, the Ittleson Foundation.

A fledgling group may be intimidated by the numbers on our budget. It should be made clear that Recycle-A-Bicycle has been extremely fortunate in seeking funding. This is due in part to the fact that RAB sprang from Transportation Alternatives, an established non-profit organization with a very experienced staff. We also had the benefit of making some lucky contacts in the public school system and the city government. We understand that most groups will start on a much smaller scale That's why we provide the "Low Budget Tool Order List."

Appendix II

Forms and Materials used by RAB in its first year two years of operation

THANK YOU

The staff of Recycle-A-Bicycle and Transportation Alternatives would like to express its gratitude to the following individuals and organizations for helping to make the first two years of our project a reality.

Peter Arce
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Ben and Jerry's Foundation
Artie-Ann and Joaquin Ben Gotten
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Bikes Not Bombs
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The Children's Aid Society
Consolidated Edison
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Richard Cusimano
Tim Forker
Freewheel Freddy
Iraida Hada
Paul Harrison
Intermediate School 218
Institute for Transportation and Development Policy
The Ittleson Foundation
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The Liz Claiborne Foundation
Ray Godwin
Lorraine Graves
John Griffin
Charles Hammond
Larry Held
John Kaehny
Jesse Kalb
Debbie and Maaret Klaber
David Kleckner
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Peter Monroe
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Pedals for Progress
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David Perry
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Toga Bike Shop
Vanessa Valdes
Landon Wickham
The Youth Bicycle Education Network

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