

St. Paul students learn by doing

In an era when there is a growing emphasis on "back to basics or the three R's," the shop students at St. Paul Island School are proving that there is still a place as well as a need for Industrial Arts in the high school curriculum. The kids here are constructing a 23 foot long Oregon Dory and are doing an admirable job. There are a number of dories already in use in the islands (the dory is an ex-

been the most gratifying experience of my career to witness the changing attitudes that I've observed in these kids this past school year. The class, after seven months of working together, is functioning as a team. They have progressed to the point where they correct and help each other. The girls became instrumental in the lofting process (more about that later) and one of them even volunteered to keep a

over the problem and it was decided to start working on Saturdays when we could have the whole day to ourselves, undisturbed. An interesting phenomenon occurred at that point - shop class got to be a fun place to be and kids that weren't even enrolled in the class started knocking on the shop door on Saturdays offering their help (shades of Tom Sawyer painting the fence). We try hard to maintain a relaxed and pleasant atmosphere in the shop and only have two rules, (1) NO HORSEPLAY and (2) EVERYONE HAS TO WORK with no sidewalk superintendents allowed. Anyway, after that first Saturday, a stereo appeared along with some good sounds, a coffee pot materialized and cookies started getting brought from home. We were off and running.

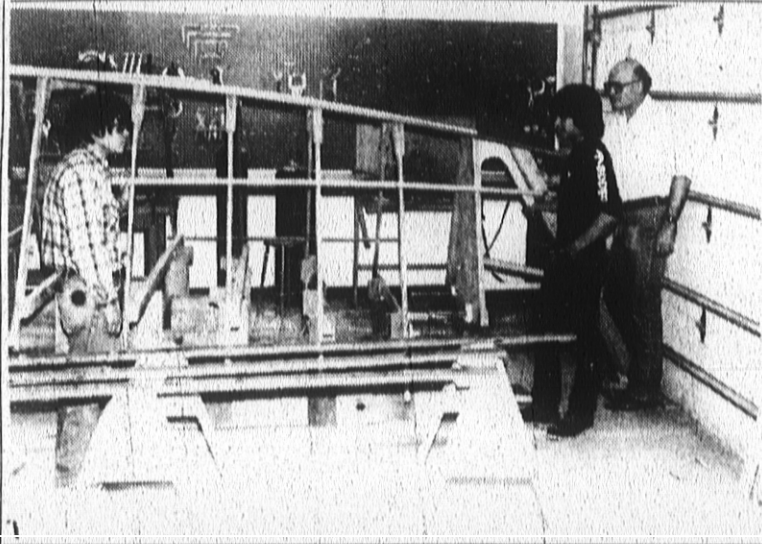
From an educational point of view, there have been some rather interesting side effects from this project (all of them beneficial). As teachers, it's often very easy for us to lose sight of the fact that the particular courses we teach do not exist in a vacuum, i.e., how many English instructors ever stop to reflect that the acquisition of good student composition skills with the attendant logical and sequential organization required, carries over strongly into the math and science areas where sequential thinking is of the essence? We see the same sort of cross-pollination taking place between the Mathematics and Industrial Arts areas, especially as it concerns the boat we're building. It is one thing for a student to solve problems from a mathematics text in the classroom and quite another to apply that knowledge in the real world of building a boat. There is a lot of math involved in boat construction including computational skills (measurements, fractions, lumber footage calculations) as well as a lot of geometry (plotting points, measuring angles etcetera). Because a boat is a three-dimensional object consisting of developed surfaces (almost all compound curved with few straight lines), the construction and layout process is vastly different from that involved in say, building a house and the

math skills required are of a much higher order. One cannot simply scale dimensions directly off the building plans as with a house. Rather, the lines of the boat must be drawn full-size by plotting points and then fairing them with a batten. The process is identical to that used in aircraft construction and is called "lofting."

There are also a multitude of benefits that accrue to the strictly academically oriented teachers as a result of our student's shop exposure, mainly in the form of the positive attitudes engendered. The kids are learning good work habits. Better yet, they are learning to work together as a group and to get along with each other in a work situation, while it is commonly believed that incompetence (lack of job quality boat, we're able to use a knowledge) is the most common reason for failure on the job, the

he is not penalized irrevocably as he might be if he received a bad grade on a test. Rather, he merely has to analyze what went wrong and then do that job again so as to achieve a good result. In other words, he receives a grade on his best quality work and the mistake gets chalked up to experience (more real world experience - how many of us never make mistakes?).

As with most projects, their success or failure depends in large part upon the encouragement and cooperation one gets from one's peers and superiors. We've been singularly fortunate in that regard. Our principal, Rick Luthi and our superintendent, Leland Dishman have given us unqualified, 100 percent support. Their stated goal is simply to work towards having the best possible school they can and



Left to right: Larry Dollarhide, Gary Paulus and Eddie Paulus checking the frames for level.

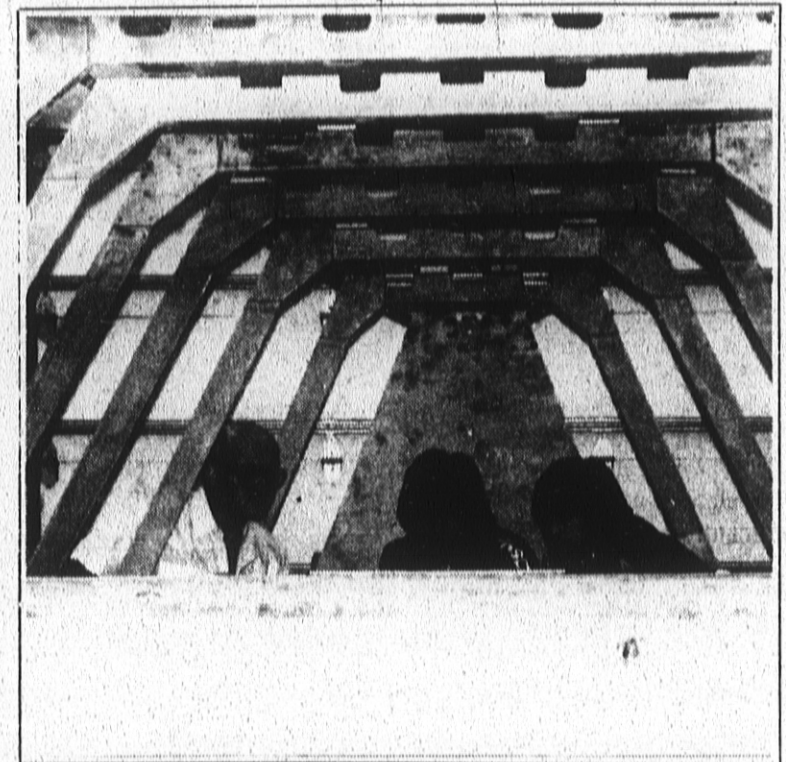
cellent rough water boat and the Bering Sea certainly qualifies in that respect) and it seemed to be a well-nigh perfect project for our woods class.

The dory, being a flat-bottomed vessel, is relatively simple for a beginner to construct while still requiring a high level of craftsmanship. In addition, there are such a multiplicity of tasks involved in building a boat that there was always something that someone could do and succeed at. This latter point was of particular importance in that our class this year was a veritable potpourri of academic and manual abilities. We have a total of nine students in the class ranging from one who is classified as talented (he's tops in his class and plans to be an architect) to three Special Education students (one mentally retarded, one mentally handicapped and one learning disabled). We have two girls in the class who had signed up for it as the lesser of two evils - we're a small school and their only alternative during the same period was to take a business class.

From a teacher's standpoint, its

daily, typewritten diary of our progress. The Special Education kids have been outstanding too. We're building the boat in what is called the WEST System (The Wood Epoxy Saturation Technique) in which every stick of wood in it gets a minimum three coats of epoxy for water resistance and strength. Concomitant with all that epoxy usage is the necessity for lots of sanding, filing and finishing work, all or which is critical to the overall appearance of the completed product. Those handicapped students have done a magnificent job and feel like an integral part of the team (they are). The more academically oriented students were placed in charge of the layout and frame assembly, all of which required good math skills as well as a high degree of accuracy and care. They also excelled at their job.

It became obvious, early on in the project, that if we were to complete the boat by the end of the school year, we would have to devote some extra time to it in addition to our regular classroom meeting (we only meet one period per day for an hour. We talked



Left to right: Rodion Kochutin, Gary Paulus and Larry Dollarhide checking the alignment on the frames.

reality is that the vast majority of people in a job situation fail simply because they cannot get along with their fellow employees. One of the great attributes of a shop class is that we have an opportunity to deal with this problem in a manner denied the classroom teacher by circumstance. Because our goal is simply to build a good much less threatening process of evaluation. If a student makes a mistake on a particular compo-

they've done everything in their power to help us succeed, from making calls to tardy suppliers to stopping by the shop on the weekends to compliment the kids on their performance.

In closing, I would like to heartily recommend a project of this sort to anyone who may contemplate something similar. It's been a terrific motivator for the kids as well as a positive learning experience for all concerned.