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A Nation of Programs with No System -- Apprenticeship In America

**A Quaint Relic From Our Industrial Past or a Useful Tool
For Our Globally Competitive Economic Future?**

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The appendices listed below are provided as a courtesy to the reader who is conducting additional research into the subject. The four items are not readily available, but are solid references that could be useful for other projects.

Appendix A: The Federal Committee on Apprenticeship Background Paper

Appendix B: Federal Committee on Apprenticeship Strategic Plan: Phases I & II

Appendix C: Alabama's Student Apprenticeship Linkage Program

Appendix D: ASSET Ford Dealer Information Package 1991 - 1993

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INTRODUCTION

In the 1970s and 80s the alarm bell sounded. America was losing too many battles in the global economic war. The realization spread through academia, government and business that the United States was slowly, but surely losing its post World War II market dominance. The 21st century appeared ominous. Was the U.S. at its zenith and now doomed to follow a seemingly inexorable path of decline? Could we possibly compete against the best in the world or were we destined to become a nation of low skill, low wages and lower standard of living?

Something must be done! And done it was.

Commissions were commissioned, blue blood panels were created and academics of every stripe poked and probed into all the nooks and crannies of the American economic machine.² What they found was a 16 trillion dollar asset that pumped out 5 + trillion dollars per year. The machine was functioning, but it needed a tuneup. Macroeconomic policy needed a thorough going over to get it in the right "investment stimulating" orientation. Doctors Deming and Juran instructed us that our business management strategies were the road to certain ruin. Total Quality Management was born. Science and technology needed to be strengthened and their commercial by-products hurried into the market place. America needed to save its money and invest in its future. Government needed to be reinvented to become entrepreneurial and a partner with the business world. And of course, the workers. The workers needed to be better educated, better trained, continuously learn throughout their working lives, be more flexible, be faster, be prepared to have five or six different jobs over their lifetime, take charge of the constant process improvements required to make their jobs more productive and to raise product quality to meet the increasingly stringent demands of a discriminating international clientele. Everyone seemingly agreed ... we must fix the American worker if we are to survive as an economic power!

It was this renewed national interest in the workforce, coupled with the opportunity afforded me by the Industrial College of the Armed Forces (ICAF) to study a U.S. industrial base issue, that drew me to assessing the health of apprenticeship in America.

The research product before you is designed to be enjoyed in parts or in its entirety. If you are interested in only the bottom line, I suggest reading the abstract, the findings and recommendations, and the conclusion. For those of you seeking background for your own research efforts, I have provided an extensive reference list. Additionally, you will find four appendices which provide material not readily available to the public:

Appendix A: Minor Miller's terrific overview of the myriad of federal job training programs.

Appendix B: The Federal Committee on Apprenticeship's Strategic Plan.

Appendix C: An interesting case study on youth apprenticeship in Alabama.

Appendix D: ASSET Dealer Information Packet ... excellent starting point to develop the Community College/Student/Employer business relationship.

If you, like me, are along for the entire ride ... thank-you. The paper tries to compress a seven month journey into twenty or so typed pages. Not my preference, but those were the rules of engagement at ICAF. I am very interested in your comments and suggestions for improvements. After June 1993, I should be reachable at U.S. Coast Guard Headquarters (G-Es) (202) 267-1848, 2100 2nd Street SW, Washington, DC 20593.

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MAJOR FINDINGS and RECOMMENDATIONS

In the readings and case studies, several consistent themes emerged:

- 1. OTHER PARTS OF THE SYSTEM NEED HELP TOO.** The problems of U.S. competitiveness involve much more than the skills of the workforce. National macroeconomic policy, legal system performance, current management practices, pressures from the financial markets to produce short term profit at the expense of long term investment, the national savings rate, global environmental policy and enforcement (just to name a few) all figure heavily into the "globally competitive" formula. If the larger system within which the workforce functions is not seriously upgraded, nothing this country does to its workforce will overcome the self defeating effects of the other system components.
- 2. GERMANY HAS A GOOD MODEL.** West Germany is by far and away THE apprenticeship model in the world. In west Germany, it is a respected thing to enter an apprenticeship. By age 16, young people are getting serious about their future. Going on to college after your apprenticeship and one day rising to the top of your firm is quite doable. The culture values the apprenticeship experience for all the benefits it imparts. Most young people enter into apprenticeships.
- 3. U.S. HAS NO SYSTEM, JUST PROGRAMS.** While there is no unified apprenticeship system in the United States, there are an abundance of federal, state and local programs and demonstration projects which attempt to deal with the range of youth/school to adult/work transition issues. The population being served is varied and complex. In addition to those academically prepared, physically capable, socially adjusted youth who need only acquire "world class skills", there are " ... youth at risk, displaced homemakers, disadvantaged workers, AFDC welfare recipients, previously incarcerated individuals, dislocated workers and others ..."

who need to be served (Appendix A, page 2). The United States stretches its "jobs" programs to the max. Apprenticeship, in all its forms, is playing a very small part. It could do so much more!

4. THERE IS A STIGMA ATTACHED TO APPRENTICESHIP. Perceptions of exclusionary practices and union control persist. Some see apprenticeship as applying only to the construction trades and other manual labor ... they see no further use for this ancient learning methodology. Still others are convinced that all "important learning" occurs in the classroom, and "doing" should not be mixed with the important and ascendant work of school.

5. WHERE'S THE PATH TO ADULTHOOD? The path from youth to adulthood is very hard to discern in the U.S. and the expectations are that you are "young" late into your 20s. You are essentially on your own to find THE way.

6. COLLEGE OR ELSE ... WHAT? Going to college in the U.S. is good and the nation is poised to help you. You stand a very good chance of doing financially better than your non-college peers over the life of your career. If you do not go to college you are largely on your own (about half do not go to college and many who do attend, do not finish).

7. WHAT ARE MY CHOICES. The availability of career information for grade, middle and high schoolers is very limited. Serious career counseling, if any, occurs late in the K-12 school experience.

8. WORK AND SCHOOL MUST BE LINKED. THERE MUST BE A REAL JOB AT THE END OF THE JOURNEY. There is no doubt. The stronger the link between education and work, the better prepared the worker. This goes for doctors, lawyers and engineers as much as it does electronics technicians, aircraft mechanics and crane operators.

9. SKILL SET FOR ALL WORKERS, NOT JUST THE "FORGOTTEN HALF", NEEDS IMPROVEMENT. The skill set needed for a globally competitive U.S. workforce depends on how you see the next decades going. If you believe, as I do, that life is going to get more technology bound, that global information exchange will vastly improve in quantity, quality, speed and availability, and that advances will continue apace in computers, expert systems, artificial intelligence, robotics, genetic engineering, materials science, and medicine, then commensurate improvements throughout the workforce skill set are in order.

10. APPRENTICESHIP DESERVES AN IMPORTANT PLACE IN AMERICA. The combination of a globally competitive nation needing a high skill workforce and young people needing assistance to make the jump from youth/school to adulthood/work is an inviting environment for apprenticeship. Add to this the recent advances in cognitive science that confirms the old adage that people learn by doing, and a national apprenticeship system becomes even more appealing.

What then is the federal role in regards to apprenticeship?

The clear and consistent message about the federal role in citizen building and workforce preparation is to assist when asked, to play the honest brokers role among the states and, with the least intrusion, assure that the vital interests of the United States are protected. Other than that, the feds should **STAY OUT!**

With that in mind, I suggest that an effective apprenticeship role for the federal government should focus on actions that:

a) Complement rather than compete with the "individual/family/employer" system.

b) Maximize the benefit of constitutional performance requirements and unique U.S. federal assets. An example is the constitutional requirement to provide for the common defense and

the existence of standing military forces. The government can meet its constitutional mandate and simultaneously provide citizen building and workforce preparation.

c) **Keep an eye on the the 21st century.** Most of us are caught up in "today". The federal government is positioned to meet today's needs while still being able to monitor and analyze global trends. The "individual/family/employer" system can benefit from federal government data and analysis.

Such a role might entail:

1. **DOING NO HARM.** The work of preparing citizens and workers is the province of the person themselves, their families, their community, their employer, their state and finally their federal government. The strongest motivators and shapers are the individuals, their families and their employers. The federal government should exercise extreme caution when intervening into that delicate relationship and should be wary of tampering with the strong motivational forces at work on the individual/family/employer level.
2. **PROVIDING A NATIONAL INFRASTRUCTURE.** Tailor the national information highway to allow schools, data repositories, researchers, and business to communicate with each other. The youth/school to adult/work transition can only be facilitated by the existence of readily available, high quality information.
3. **STIMULATING R&D.** Use R&D funds to stimulate improvements in training methodology, communications, career counseling, cognitive science, standards setting, skill needs assessment, and for benchmarking other systems.

4. BENCHMARKING INTERNATIONALLY and NATIONALLY. Monitor how well the competition is doing and share the results with the nation.

5. COMMUNICATING. Facilitate communication among team members ... the individual citizen, schools, unions, researchers, trade organizations and businesses.

6. ENCOURAGING APPRENTICESHIP THROUGHOUT THE FEDERAL JOBS SYSTEM. The federal government employs several million people and spends money with the employers of many millions more people. Apprenticeship is good for the federal job system and the federal job system is good for apprenticeship.

7. ENHANCING THE APPRENTICESHIP/BUSINESS COMMUNITY/EDUCATIONAL SYSTEM RELATIONSHIP THROUGHOUT THE NATION. There is a symbiotic relationship that just about everyone acknowledges. People need meaningful work and the skills to live meaningful lives. The nation needs a competitive, continuously improving economy and citizens to manage their democracy. Business needs a high skill, flexible, globally competitive workforce ... its most important asset. The nation needs tough, demanding consumers to motivate business to improve. Primary, secondary, post-secondary education's task are made easier and the results more useful when the educational experience directly relates to the students' lives.

APPRENTICESHIP in AMERICA

I began with my findings and recommendations as a courtesy to the reader who is pressed for time or for the reader who likes to get to the "bottom line" first and hear the argument second. Admittedly this ... telling you the ending, then the beginning and the middle of the story ... can be a bit awkward. I wanted my position brought out at the beginning to allow the reader to factor my bias against the information being presented. The essence of my position is that the U.S. needs an apprenticeship system to:

- a) Improve its workforce skill set
- b) Assist in the arduous "youth to adult" transition.

School alone cannot do it. Work alone cannot do it. I contend that nothing to date has been invented which can surpass the combination of solid role models, a high quality apprenticeship program and meaningful employment to build and maintain a high quality, top performing citizenry and workforce. Nothing.

Before going into the details of the matter, let us recall the three questions to be explored:

1. What is the current state of apprenticeship in the United States?
2. Is there a role for apprenticeship in 21st century America?
3. What, if any, is the legitimate apprenticeship role of the federal government?

On the way to the answers, we will follow this path:

- a) Establish a **foundation** for discussion – A brief history, current status and trends.
- b) Review the **Federal structure** – organizations, legislation, links to states and localities and private sector.
- c) Examine **Literature** – major studies, journals, magazines, the media.
- d) Conduct **Case studies** – FORD & Northern Virginia Community College, Chesterfield, Va. Schools & Project Awareness, skill development in the maritime industry, Rick, Bill and Tony – apprentice experiences, and finally, several grassroots efforts.

Apprenticeship – Will the real program please stand up?

" ... For example, in some instances, apprenticeship is being viewed as a generic concept -- one that can be loosely applied to a variety of learning situations. Likewise, others have coined such terms as 'youth apprenticeship' to characterize various school-to-work transition programs."

" ... When a trained person completes a registered apprenticeship program, he or she is prepared to go to work as a fully trained, competent journeyman whose skills enable him or her to perform effectively in the workplace. Few, if any, other types of educational programs can make this claim." *From U.S. Dept of Labor fact sheet – The Meaning of Apprenticeship, When and How to Use the Term, pages 1-2*

When most of us think of the apprenticeship experience, if we think of it at all, the image we get is "blue collar", manual labor, labor unions and probably construction trades. Some of us may recall the apprenticeship anecdotes of Benjamin Franklin (printer apprentice with his brother James), Paul Revere (silversmith apprentice with his father) and Thomas Jefferson ("read" the law with George Wythe). Apprenticeship in America conjures up the past. In a nation of 260 million people, perhaps 250,000 to 300,000 people are being apprenticed in one of 700 crafts or skills ^{3 (US DOL, 1990)}. West Germany (population 62 million), on the other hand, has over 1.6 million people engaged in apprenticeships ranging from auto mechanic to banker ^{4 (Prewo, 1993)}. In the U.S., apprenticeship is an interesting sidebar in workforce training. In West Germany it is the main attraction!

From its European guild origins, through the U.S. colonial period of indentured servitude and on to today's formally contracted, government structured/industry provided training, apprenticeship has been continuously evolving. A brief chronology helps to illustrate the point ^{5 (US DOL, 1990)}.

- o Colonial New England – "Many youngsters less than 10 years old whose parents could not support them were indentured to masters who agreed to teach them a trade." "(They) were usually bound to their masters until they were 21 years old."

- o 1718 – Benjamin Franklin at age 12 enters his printers apprenticeship He will quit before he completes it.

- o 1832 – Lyman Slocum of New Bedford, Mass. bound by his father to a five year carpenter apprenticeship with Thomas Remington. The master promises to teach, instruct or cause to be instructed the art, trade or calling of "House-Carpenter."

- o 1865 – Pennsylvania Railroad provides one of the first examples of graduated wage scales for apprentices.
- o 1911 – Wisconsin enacts legislation to place apprenticeship under the jurisdiction of an industrial commission and for apprentices to attend at least 5 hours of classroom instruction per week.
- o 1934 – The Federal Committee on Apprenticeship is created. Secretary of Labor appoints representatives and serves as the national policy recommending body.
- o 1937 – National Apprenticeship Law (also known as the Fitzgerald Act) is enacted. This law provides the foundation for the current Bureau of Apprenticeship and Training in the Dept. of Labor and the apprenticeship programs in each of the fifty states. Primary focus is to "... Bring together employers and labor for the formulation of programs of apprenticeship ..."
- o 1984 – Carl Perkins Vocational Education Act and 1990 Carl Perkins Vocational and Applied Technology Act. Provides the foundation for the current Office of Vocational and Adult Education's technical training functions. Primary focus is at high school vocational/technical training and career counseling.
- o 1980s and 1990s – Era of studies, commissions, and a "mishmash" of local, state, federal, private sector and volunteer efforts. If you are a child in Japan or West Germany, you enter a system in your early teens. If you are a child in America you are held in a type of educational suspension until your late teens or early twenties, then you move on to do economic battle with those Asian and European kids who are ready, willing and able to compete on the global level.

So where does this leave the nation in regards to apprenticeship? I propose the following three prong starting point:

First, we have created a **variety of terms** to describe a range of activities dealing with the transition of a person from youth to adulthood and from student to worker. There is the traditional apprenticeship as defined by the Federal Committee on Apprenticeship. Then there is Vo-Tech preparation training, Youth Apprenticeship, Co-Op Education, Associate Degree plus work experience programs, generic work based learning and very informal person to person learning experiences which many people call ... apprenticeships! Any and all of these terms can mean "apprenticeship" to different people. The results from all these training methodologies ranges from formal government certification of journeyman and master skill levels, to an Associates Degree which implies, but does not certify certain skills, to word of mouth assurances that a person knows what they are doing!

Second, we have a **variety of federal legislation** which produces a variety of federal executive branch programs. Sometimes these programs are in synch and other times they adversely compete to the detriment of the workforce, the employer and the taxpayer.

Third, in the absence of a strong, focused national system, we have a loose collection of local, state, federal, union, industry, individual and volunteer organization programs attempting to fill this nation's youth to adult/student to worker transition needs. Some of these efforts are working very well and others are not. Some individual programs may very well be the best of their kind in the world.

My goal is to sift through this miasma and determine what is working, what is not working and what improvements might be made. The first stop on that journey is the U.S. Departments of Education and Labor.

The Departments of Education and Labor – Who's got the ball?

"Principal responsibility for overseeing the German system lies with the Federal Labor Agency, a sprawling nonprofit corporation run by representatives of business, labor and government." *Stephen Kinzer, New York Times, February 6, 1993, page 1.*

Under the strictest interpretation of "apprenticeship", it could safely be said that the U.S. government has funded approximately \$15 – 20 million per year over the past decade to meet its obligations under the 1937 National Apprenticeship Act. That translates to a federal staff of several hundred people spread out among the fifty states ^{6 (US OTA, 1990, Boi/Miller interview 1993)}. This modest federal effort fuels a system of 250,000 to 300,000 apprentices per year. The states on the other hand provide about \$375 million per year to individual firms for all types of worker training ^{7 (US OTA, 1990)}.

Clearly, the action in "direct government assistance" for worker training is at the state level and very little of that goes to apprenticeship. The main contribution of the federal government is in indirect funding of \$3 – 4 billion per year through the Job Training Partnership Act (Dept. of

Labor) and the Carl Perkins Vocational and Applied Technology Education Act (Dept. of Education). Both of these pieces of landmark legislation and the programs they fund are related to, sometimes supportive of and sometimes competitive with apprenticeship. The funds they provide and the policies they enforce influence high school technical training, community college technical training, career counseling and disadvantaged/dislocated worker training.

Some of the activities funded by the Departments of Education and Labor are:

- o State apprenticeship organizations, some managed by the states, some by the federal government
- o The Federal Committee on Apprenticeship for federal policy guidance
- o Demonstration projects such as evaluating current Tech-Prep programs and disseminating the results to other programs, testing curriculum changes and new teaching materials/methodologies, evaluating improvements to career counseling, student testing, and establishing skill requirements
- o Studies, reports and research, and dissemination of the results

Who then has the ball when it comes to apprenticeship? The Department of Labor's Bureau of Apprenticeship and Training has the responsibility, but no funds. The Department of Education has the funds, but their focus is mostly on the classroom, somewhat on the workplace, but not the apprenticeship. If money is an indicator of national priorities then all worker training takes a back seat to primary, secondary and post-secondary schooling (\$311 billion in 1987!)⁸ (US OTA, 1990), and apprenticeship is a mere afterthought within the national training picture.

Who has the "federal" ball on apprenticeship? No one.

Major Studies and Reports

"Corporate training in the United States is delivered unevenly across firms and among workers ... The U.S. government has little influence on training of employed workers. Federal programs focus on the unemployed and economically disadvantaged ... Other nations, including West Germany and Japan, have more effective public and private training systems than the United States." *From the Office of Technology Assessment study, "Worker Training - Competing in the New International Economy, page 12.*

Much has been written in the 1980s and 1990s about the U.S. workforce and the need for improved worker skills. The 21st century repeatedly has been prophesied to be increasingly

competitive ... an economic dog fight. At risk, if the writings are to be believed is America itself. A highly trained, highly productive, flexible, continuously learning workforce would be needed if the U.S. wanted to remain a major economic force. Would apprenticeship be useful?

To gain a better perspective on the appropriate role for apprenticeship in the coming decades, I chose seven (7) major works encompassing a wide range of worker, workplace and U.S. economic competitiveness issues. My concern was not so much for the mountain of facts and figures, although the details are certainly important. More important, I thought, are the common threads that would either support or refute the notion that apprenticeship had a place in 21st century America. The reports I chose are:

1. 1987 **"Workforce 2000 – Work and Workers for the 21st Century,"** Hudson Institute
2. 1989 **"Work–Based Learning: Training America's Workers,"** U.S. Department of Labor – Employment and Training Administration
3. 1990 **"America's Choice: High Skills or Low wages!,"** National Center on Education and the Economy
4. 1990 **"Worker Training – Competing in the New International Economy,"** U.S. Congress Office of Technology Assessment
5. 1991 **"America and the New Economy",** The American Society for Training and Development
6. 1991 **"Combining School and Work: Options in High Schools and Two–Year Colleges,"** U.S. Department of Education Office of Vocational and Adult Education
7. 1992 **"Learning a Living: A Blueprint for High Performance,"** U.S. Department of Labor, Secretary's Commission on Achieving Necessary Skills (SCANS)

The 900 + pages offered a wealth of information. Taken as a whole, I think the reports support the continued use of apprenticeship into the next century. Several thoughts occur throughout:

- o Relative to its principle economic competitors, the U.S. does not do a good enough job training its workforce.
- o The demands for workforce skills are high and going higher.
- o On the whole in America, time in the classroom and time in the workplace are two unrelated, non integrated parts of a person's life ... school vs. the real world.
- o Global competition is driving producers of goods and services to continuously improve and rapidly respond to increasingly stringent customer requirements.

From **"Workforce 2000,"** the six challenges (pages 105–116) summarize the environment in which the U.S. workforce will have to live. Specifically:

- o The U.S. government will have to pay more attention to balancing world growth rather than just increase U.S. share of world trade.
- o U.S. prosperity will depend heavily on productivity improvements in the service sector rather than the manufacturing sector.
- o The aging workforce (average age moves toward 40) will have to be adaptable and engage in life long learning to be competitive.
- o Conflicting needs of women, work and families will have to be reconciled.
- o Black and Hispanic workers will have to be fully integrated into the economy.
- o All human capital – knowledge, skills, organization and leadership – will have to be improved. This is THE key to economic competitiveness.

From **"Work-Based Learning,"** a perception that the aging of the U.S. workforce coupled with its changing demographics will collide with an international economic environment where, "Rapid technological change is increasing the complexity of the workplace (page i). To meet this challenge are eight federal policy changes ^(page v):

- o Expand structured work-based training programs using improved features of apprenticeship.
- o Establish a national work-based training body to recommend policy and provide direction.
- o Streamline and coordinate Federal regulations affecting apprenticeship to encourage expansion of the apprenticeship.
- o Improve the administration of the existing apprenticeship system.
- o Enhance the recognition value of program sponsorship and skill certification.
- o Develop work-based learning alternatives for non-college bound youth.
- o Provide additional incentives to employers to adopt structured work-based training programs.
- o Intensify publicity on apprenticeships and work-based learning.

Essentially, this proposal "strengthens the existing apprenticeship system" and encourages the "expansion of structured work-based training."

"America's Choice: High Skills or Low Wages!" focuses our attention on falling average weekly earnings and the slowing of the U.S. productivity growth rate. In response, the study offers five recommendations ^(pages 69–90).

- o Establish national student performance standards to be met by age 16 and benchmark those standards against the best in the world.
- o States should take responsibility to ensure that everyone meets the standards.
- o A system of technical, and professional certificates as well as associate degrees should be established for the people who do not complete a four year college degree.
- o Provide incentives to employers to support lifelong learning and high performance work organizations.
- o Create federal and state Employment and Training Boards to oversee all school-to-work transition programs.

The Congressional Office of Technology Assessment picked up on the workforce competitiveness issue and translated the requirements for winning in the "New International Economy" into suggested federal policy options. Their 1990 report, "Competing in the New International Economy" essentially starts with an international training benchmark exercise and concludes with a menu of training policy options. Table 4 below provides OTA's ^(page 86) findings on comparable international training systems:

Table 4—Worker Training Compared

	United States	Germany	Japan	Korea
School-to-work transition	Left mostly to chance; some employers have ties with local schools	Apprenticeship for most non-college-bound youth	Personal relationships between employers and local schools	Employers recruit from vocational and academic high schools
Vocational education				
Extent	Available in most urban areas	Universally available	Limited; mostly assumed by employers	Universally available
Quality	Wide range: poor to excellent	Uniformly good	Fair to good	Vocational high schools uniformly good
Employer-provided training				
Extent	Largely limited to managers and technicians	Widespread at entry level and to qualify for promotion	Widespread	Limited; employers rely on public vocational institutes
Quality	Wide range; some excellent, but more often weak or unstructured	Very good	Very good	Generally poor
Public policies	Federal role very limited; State aid to employers growing	Govern apprenticeship; encourage continuing training	Subsidies encourage training by small firms	Directive—some employers resist policies

Source: Office of Technology Assessment, 1990.

On the next page, Table 7 ^(page 28) lists OTA's policy recommendations to improve U.S. training.

The next report, "America and the New Economy," is an outgrowth of the National Center on Education and the Economy (NCEE) and the Office of Technological Assessment (OTA) reports. This should come as no surprise with Anthony Patrick Carnevale being a Vice President at The American Society for Training and Development, a member of the Advisory Panel for the OTA report, and commission member on the NCEE team. What is important here is the translation from "national level need to be economically competitive" to the nuts and bolts of the needs of the individual human being ... the cornerstone of the national economy. "America and the New Economy" maps out the evolution of the skill set required from pre-industrial economies through mass production economies and ends with an estimate of the workforce skills required in the "New Economy". The skill set the ASTD team envisions⁹ (ASTD, 1991) includes:

- o Academic Basics – Reading, Writing and Computation
- o Knowing how to learn
- o Communication – Speaking and Listening
- o Adaptability – Problem solving and creative thinking
- o Developmental Skills – Self esteem, goal setting, personal motivation and personal development
- o Influencing Skills – organizational effectiveness and leadership

The reports that I have reviewed thus far frame the problem of preparing and maintaining a skilled workforce capable of keeping Uncle Sam economically competitive. They speak to the seriousness of the problem, and the dire consequences of a nation not attending to that problem.

With the six key skill areas detailed by the American Society for Training and Development, we shifted our focus toward solutions. The next two reports, "Combining School and Work" from the U.S. Department of Education and "Learning a Living: A Blueprint for High Performance" by the U.S. Department of Labor, take us into some solutions being advocated by our federal trainers and educators.

The Department of Education (DE) report zeroes in on the connection between school and work, and it offers two options purposefully designed to strengthen that connection. The first option " ... directly ties school to work by engaging students in both activities simultaneously, and structuring the work experience in a way that promotes learning." (page 39) Cooperative education and apprenticeship training are offered as examples of this option. Interestingly, the report appears to limit the applicability of the apprenticeship option by saying:

"Employers' limited willingness to invest in training also constrains the expansion of apprenticeship, another traditional approach to linking learning with work. Apprenticeship requires more initiative by employers than cooperative education does ... enrolling hardly any students in high school and fewer than 2 percent of high school graduates." (page 39)

The second DE option advocates the use of tech-prep and vocational courses within the high school and community college setting. The approach, the authors argue, " ... infuses academic courses with the practical, problem-solving approach of vocational-technical education. And it avoids the invidious tracking of students." (page 39)

Not surprisingly, the education team advocates a classroom based approach which has been tailored to give the student "structured work experience." High school tech-prep and community colleges play the starring roles in this training approach with apprenticeship offering only minor support.

The final report is from the widely quoted U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS). As the name implies, "**Learning a Living: A Blueprint for High Performance**," the Commission produced a detailed plan to produce a "high-skill, high-wage workforce. The Commission's recommendations centered on a) America's schools, b) Work-based learning, c) Creating high-performance organizations and d) U.S. student competency certification. The four point plan is illustrated on the following page.

**THE COMMISSION RECOMMENDS FULL IMPLEMENTATION
OF THE FOLLOWING ACTIONS BY THE YEAR 2000:**

Reinventing Schools

- Workplace know-how (the SCANS foundation and workplace competencies) should be taught along the entire continuum of education, from kindergarten through college.
- Every student should complete middle school (about age 14) with an introduction to workplace know-how.
- Every student by about age 16 should attain initial mastery of the SCANS know-how.
- Every student should complete high school sufficiently proficient in the SCANS know-how to earn a decent living.
- All Federally-funded programs for youth and adults, including vocational education programs, should teach the SCANS know-how at appropriate levels.

Fostering Work-based Learning

- Federal agencies should incorporate SCANS workplace competencies into their own employee programs.
- Private-sector work-based training programs should incorporate training in the SCANS workplace competencies.
- Coalitions of businesses, associations, government employers, and labor organizations should teach the SCANS competencies to the current workforce, including employees of small businesses.

Reorganizing the Workplace

- The vast majority of employers should adopt the standards of quality and high performance that now characterize our most competitive companies.
- Firms should develop internal training programs to bring employees to the proficiency in the SCANS competencies needed for high-performance work organizations.

Restructuring Assessment

- A national education-based assessment system should be implemented that will permit educational institutions to certify the levels of the SCANS competencies that their students have achieved.
- Public and private employers should define requirements for higher-level competencies.
- Employment-based assessments should permit diagnoses of individual learning needs.

Source: SCANS Report - Blueprint for High Performance, page xxi, exhibit 2.

The assembled reports indicate that U.S. economic health is in jeopardy. Part of the problem appears to be the workforce. It is not productive enough now and is estimated to be less so in the future. The solutions offered stress school reform and workplace reform to boost individual worker competencies. As far as apprenticeship is concerned, the commissions, panels and researchers are largely silent. Certainly, mention is made to the "traditional" work-based learning, but almost as quickly apprenticeship seems to be dismissed.

Why?

I needed to look beyond the Departments of Education and Labor. I needed to expand my search to include a wider variety of authors, and other points of view. Most importantly, I needed to visit the people who are actually engaged in the "school to work transition".

Books, Newspapers, Magazines – Other Points of View

"Vocational-technical education must make the U.S. public better aware of its role as the primary preparer of the nation's world-class work force and where our work force stands in the global economy." *Winifred Warnat, Director, Vocational-Technical Education, U.S. Dept of Education, Vocational Education Journal, May 1991, page 25.*

"The administration should set a national framework, offer tax credits and, on the state or local level, provide vocational schools. Otherwise, it can – and should keep its hands off." *Wilfried Prewo, chief executive of the Chamber of Industry and Commerce in Hanover Germany, Wall Street Journal "The Sorcery of Apprenticeship," February 12, 1993.*

"Reed (Bruce, Domestic Policy Assistant Transition Director) says that President Clinton may ask Congress for \$200 million next year, or 20 times what is being spent now on new job training programs for youth, leading eventually to a national apprentice system." *As reported by Madge Kaplan from WGBH, Boston, MA for the MARKETPLACE program on American Public Radio, January 21, 1993.*

I did not have far to look to find interest in apprenticeship and allied issues. For the ease of the reader, I have assembled some of the high points from this diverse data collection:

Source

Teaching the Elephant to Dance
by James Belasco

Relevancy to national apprenticeship

Any apprenticeship system for the 21st century will have to produce journeyman and masters who can perform in this environment.

Key Points (for *Teaching the Elephant to Dance*)

Successful organizations, big and small, are lean, flexible and customer driven. Traditional mass production management systems are rapidly disappearing and being replaced by highly skilled, empowered employees who must not only perform their function, but must contribute to the continuous improvement of the company.

Source

The Rise of the Expert Company
by Edward Feigenbaum

Relevancy to national apprenticeship

Any apprenticeship system for the 21st century will have to seriously consider information technology for apprentice training purposes as well as the very jobs for which apprentices are being trained.

Key Points

The very nature of work is changing under the influences of the information revolution. With expert decision making and artificial intelligence systems exploding into the marketplace, many of the jobs we know today will be non existent.

Source

Apprenticeship for Adulthood – Preparing Youth for the Future
By Stephen Hamilton

Relevancy to national apprenticeship

A national apprenticeship system is needed in the U.S., but not in its current form. It needs to be reinvented. The next step is a demonstration project to get apprenticeship past the considerable barriers it faces in this country.

Key Points

"The essential elements of apprenticeship are already in place in the United States." (page 153)

"Taking advantage of the cooperative education structure, which is already in place, will require academic teachers to set aside their prejudices against vocational education and vocational teachers." (page 158)

"Americans are pragmatists. Arguments are less potent than demonstrations. Therefore, the next steps toward developing an American-style apprenticeship system should be devoted to demonstrating its viability and utility." (page 182)

"Reinventing apprenticeship will challenge the capacity of schools, communities, workplaces, and government to work together to create new learning environments for youth." (page 185)

Source

The Work of Nations
by Robert Reich

Relevancy to national apprenticeship

1. Robert Reich is presently the Secretary of Labor. His view of apprenticeship counts.
2. His admonitions point to the fact that that we have become a global village. Any "U.S." apprenticeship system should be aware of, if not focus upon the needs of our global customers.

Key Points (for *The Work of Nations*)

Just as the nature of work for the individual employee and individual companies is changing in response to global influences, so too are nation-states changing. "The modern nation-state, some two hundred years old, is no longer what it once was: Vanishing is a nationalism founded upon the practical necessities of economic interdependence within borders and security against foreigners outside. There is thus and opportunity for us, as for every society, to redefine who we are, why we have joined together, and what we owe each other and the other inhabitants of the world." (page 315)

Source

Made in America
By Michael Dertouzos, et al

Relevancy to national apprenticeship

1. The commission calls for additional money for apprenticeships.
2. The commission notes that the current generation of engineers and business leaders are not as skilled as they need to be. Fixing this problem goes a long way to removing a current barrier to reinventing apprenticeship in America.

Key Points

Pages 309-314 summarize the MIT Commissions educational reform recommendations. Two key reforms call for engineering and business school reform, and for " ... tax incentives to stimulate additional investment in the education, training and retraining of workers, including apprenticeship programs." (page 312)

Source

The Japan That Can Say No
By Shintaro Ishihara

Relevancy to national apprenticeship

Our key competitor, Japan, trains its workforce with public vocational training, coupled with extensive company training. Designers of any U.S workforce training system would be well advised to consider the Japanese model as well as the favored West German model. They must be doing something right! Let's borrow the best from them as they have from us.

Key Points

Ishihara offers a detailed prescription for U.S. global economic competitiveness. Workforce training figures prominently in his thinking. His emphasis is upon company training along with public vocational institutes.

Source

"Technology for America's Economic Growth"
By William J. Clinton

Relevancy to national apprenticeship

The President of the United States has called for the creation of an apprenticeship system.

Key Points (for "Technology for America's Economic Growth")

The President's policy recommendations make "youth apprenticeships" one of four key reforms to help create a high-performance workplace required in a global economy. He calls for a "National Apprenticeship Program." (page 13 and page 3 of the "Clinton - Gore on Education" supplement)

Source

"Germany Prepares Kids for Good Jobs; We are Preparing ours for Wendy's," Smithsonian, March 1993.
By Edwin Keister

Relevancy to national apprenticeship

1. Discusses the "Youth Apprenticeship" concept which is the likely policy choice of the President and the Secretary of Labor.

Key Points

The article focuses on the developing use of "Youth Apprenticeship Programs" (youth apprenticeship differs from high school vo-tech and tech-prep in that the high schoolers are "apprenticed to a company in their third and fourth years of school. They work several days a week and attend school several days a week. The article points to two main obstacles to Youth Apprenticeship ... unions fearing a deluge of cheap labor and vo-tech instructors fearing the loss of their jobs. Provides several excellent case studies.

Source

"Youth Apprenticeship in America Guidelines for Building an Effective System", W.T. Grant Foundation, 1992.
By Susan Berryman, et al

Relevancy to national apprenticeship

1. Defines "Youth Apprenticeship" concept
2. Offers a detailed blueprint for a national system
3. Stresses three goals of Youth Apprenticeship: competence, confidence and connections for young people

Key Points

Major study from the Commission on Youth and America's Future. Attacks all the implementation questions head-on. Very nuts and bolts. A must read for anyone seriously engaged in apprenticeship programming.

And there is more! More interest in the workforce. More interest in the transitions from youth and school to adulthood and work. There is a great deal of interest in economic competitiveness and, I was pleased to note, in apprenticeships of all colors and stripes. The Washington Post, the New York Times and the Wall Street Journal have all recently carried

major workforce training related articles. The headlines tell the story:

"German Job Training: A Model for America?" (Washington Post October 1992)

"Importing Advice on Job Training – Our toughest Competitors Can Teach Americans How to Work Smarter" (Washington Post November 1992)

Germans' Apprentices System is Seen as Key to Long Boom (New York Times February 1993)

In the February 12, 1993 issue of the Wall Street Journal, a Hanover Germany Chamber of Industry and Commerce executive wrote, "An important factor in the German success, though, is recognizing that college is not always the answer. Many jobs, in fact, do not call for a costly college education. The America pro-college bent often yields over-qualified and directionless people." The New York Times ran its lead story in the December 29, 1992 Business Day section, "Graduate Study for Factory Hands – Among the former apprentices: the guys in suits." The story details the Milford Fabricating Company of Detroit, Michigan and its 40 + year old apprenticeship system. The article notes that Milford is a non-union shop, the graduates of the program compete effectively with college grads on salary and most often exceed college grads in job satisfaction, and that the company's president has come out of the apprenticeship program.

There certainly is no lack of discussion on the topic. "Youth Apprenticeship" appears to be on the rise, with the target population for this type of apprenticeship being third and fourth year high school students. The Milford Fabricating Company story touches another age group, the post high schooler. Interesting to note, is the lack of social stigma surrounding apprenticeship at Milford. Maybe the Japanese style worker training programs may translate to the U.S. after all. Barriers were highlighted, too. Union fears as well as the job preservation concerns of the current education system must be addressed. The President of the United States is speaking of a National Apprenticeship System. All the writers appear to be genuinely concerned about the fate of the "Forgotten Half". This bodes well for apprenticeship.

Thus far, we have examined some of the major reports from the late 1980s and early 1990s dealing with the larger national issue of workforce competitiveness and we reviewed a variety of authors' works to see how we might remedy the ills defined in the reports. Our next and last task is to examine what is happening on the actual job site. I selected the following cases because they represent the wide range of alternatives for preparing a human being to be successful in the marketplace:

<u>CASE</u>	<u>TYPE OF TRAINING</u>
ASSET – FORD, NATEF, and NOVA Community College	Company/Community College joint venture, includes a job at the end of training.
Project Awareness	High school tech–prep program, in concert with U.S. Department of Education and Philip Morris to improve teacher competencies and curriculum.
Harry Lundeberg School of Seamanship	Resident union sponsored training, includes a job at the end of training.
Sail Making at North Sails	On the job apprentice–like experience. World leader in its field.
Westlawn Institute of Marine Technology	At home mail/telephone course in concert with Naval Architect mentor/certifier. Sponsored by an industry association. Includes the Naval Architect designation and may lead to a BS in Engineering.
Interviews with former apprentices	Traditional, federally registered apprenticeships or military, apprentice–like programs.
Stonemasons	Self–help, local apprenticeship that has developed into a nationally successful business.
Theater Hands	Small easily replicated program to fill "niche" professions.
Soil Soldiers	Confidence and skill builder much like the CCC of the depression era.
YouthBuild	Inner city skill builder & community builder.

Northern Virginia Community College, the National Automotive Technicians Education Foundation and Ford Motor Company

"With an eye toward the future, Gage (Earl, Operational Planning and Technical Training) notes that the Ford Communications Network is able to telecast to any of 278 Ford facilities in North America ... 'We also are looking at the feasibility of broadcasting to dealerships, in hopes of expanding technician participation,' Gages says. Stay tuned. The future promises a more amazing and exciting era than anyone imagined just a few years ago." *From the Ford Technical Connection, Vol. 1, No. 2, 1993.*

Description: ASSET, the Automotive Student Service Educational Training program is a joint training venture of the Northern Virginia Community College, the Ford Motor Company and for each student, a local Ford dealership sponsor to provide "Ford and Lincoln–Mercury dealerships and their customers with well–qualified, Ford–trained service technicians who are proficient in the latest automotive service technologies and methods." ¹⁰ (FoMoCo ASSET Pamphlet) The program entails 8 weeks at school followed by 12 weeks at the dealership. The 2 year program culminates in an Associates Degree in Applied Science and a job with the Ford dealership. The program is structured under the certification of the National Automotive Technicians Education Foundation (NATEF) – the independent automotive industry certification body that manages the national Automotive Service Excellence (ASE) program.

The Northern Virginia program is one of 60 + similar programs within the Ford ASSET system. Ford pays for the instructor and provides state of the art equipment and vehicles. Eventually, the entire system of Ford Motor Company, the Ford dealer network and the ASSET training site network will be connected via the Ford Communications Network (a satellite broadcast system). Appendix D provides a copy of the very detailed Ford dealer information package that specifies responsibilities, costs, and curriculum.

Apprenticeship policy implications: Perkins Act money from the Department of Education has been used by NATEF to improve their certification program, which in turn has helped community colleges and Ford. The end result seems to be a better trained technician on the shop floor. The Environmental Protection Agency has also provided NATEF with funds ¹¹ (NATEF, 1992)

to assist in the skill certification process under the notion that better trained technicians means better functioning vehicles and cleaner air. These uses of federal money fit nicely with the "federal government as facilitator" role. The ASSET program is similar to the GM, Nissan, and Toyota programs. The automotive technician training program deserves an in-depth look to see what might be transportable to other industry training situations. NATEF also warrants an in-depth look as mature, independent national certifying body.

Project Awareness – The Chesterfield Public Schools and Philip Morris USA

"Nationwide, abilities required for successful efforts in teaming, analysis, problem solving and communication are found to be lacking. In response to these concerns, Chesterfield County Public Schools and Philip Morris Companies, Inc. established a business/educational partnership in September, 1991 called **Project Awareness**. The Project is designed to be a model for systematic educational reform including restructuring of traditional academic and vocational/technical education in cooperation with business and industry." *From the Foreward of the Project Awareness Instructional Guides, Deborah Hinton, Project Coordinator, August, 1992.*

Description: An excellent "work-in-progress" example of a high school undergoing transition from a traditional program of college prep, general prep and vo-tech prep to an integrated program to prepare all students for entry into the workforce or post-secondary education. The program has entered into a business partnership with Philip Morris, USA in Richmond, VA to upgrade the curriculum and instruction in communication, computer science, math, the general sciences and higher order thinking and problem solving. Changes to the junior and senior year will offer career awareness training, workplace skills, and a Youth Apprenticeship which may lead to an Associates Degree. The project is tapping the services of the Virginia Department of Education Research and Evaluation Division for the apprenticeship program evaluation criteria and the national Center for Education and Training for Employment for research and technical assistance. Chesterfield County is providing strong support for the program. This should be an excellent model for other systems undergoing transformation.

Apprenticeship policy implications: The Chesterfield program exemplifies current Department of Education thinking on the preferred approach to vocational training at the high school level.

Programs such as these touch probably every important workforce preparation issue:

- o What age to start, 15 –16 year old like West Germany or 18 – 19 like the U.S?
- o What approach to take, vocational school then on to company training like Japan and Korea, a dual educational system with tech kids off to "real" work by age 16 in West Germany, or the high school emulating the work environment approach favored in the U.S?
- o How important is having a real employer involved in technical training? In West Germany it would appear to be vital. In the U.S. it would appear to be a nicety ... an add-on to enhance the educational experience.
- o When to begin career counseling, aptitude testing, work place exposure? How to do these things?
- o How to translate the skills required by a rapidly changing marketplace into training objectives capable of being achieved in the classroom?
- o How to eliminate vocational/technical second class citizenship?

The success of these programs should not be judged by graduation rates, or the quality of their facilities, but by their student performance, and their success in the marketplace.

Benchmarks established by an independent federal evaluation of individual program performance levels may very well be the key federal role and a powerful catalyst to improve U.S. technical training.

Unique training opportunities in the maritime industry – Harry Lundeberg School of Seamanship, North Sails and the Westlawn Institute of Marine Technology

"The Seafarers Harry Lundeberg School of Seamanship is the largest training facility for deep sea merchant seafarers and inland waterways boatmen in the United States. The school has developed a pioneering approach to education, which has successfully integrated vocational training, academic enrichment and trade union responsibility." *From the Seafarers Harry Lundeberg School of Seamanship Catalog, 1992, page 4.*

Description: The maritime industry provided three very intriguing examples of the business world taking care of its own training needs and successfully competing on a global level with the resulting workforce.

Seafarers International Union has a world-class mariner training facility in Piney Point, Maryland on the Chesapeake Bay. In addition to advanced skill training, and an Associate Degree program, SIU runs an entry level program that prepares the novice to go to sea and offers the new mariner a job, at sea under the continuing guidance of an experienced crew, upon completion of the program.

North Sails is arguably one of the best sailmakers in the world. North has sail lofts around the globe. To become a sailmaker, a person need only convince the local loft that they are ready, willing and able to learn the "Art and Science" of sailmaking (*Art and Science* is the title of Tom Whidden's book on sails. Tom is President of North Sails and an internationally renowned competitive sailor). It is quite possible for a reasonably talented, "very" hard working high school graduate to one day own and operate a North Sails loft.

The Westlawn Institute of Marine Technology offers a rigorous small craft design home study course under the mentorship of a Naval Architect. Student/faculty exchanges are by mail and telephone. Program graduates include yacht design superstar Rodney Johnstone, father of the world famous "J" Boats. The Institute, founded in 1930, is run by the National Marine Manufacturers Association.

Apprenticeship policy implications: These examples hit directly home on three federal policy issues.

First, the issue of using federal funds as stipends or incentives to business to hire apprentices. These three organizations do not get federal enticements to train people. Their businesses provide the appropriate stimulus. The "**Report on Impacts Study of New Youth Initiatives in Apprenticeship**" findings support this observation.¹²
(Dept of Labor, 1981)

Second, the issue of the organization who delivers the training service. These examples reaffirms that trade unions, trade organizations and small businesses can be world class vocational-technical trainers as well as providing high skill employment.

Third, the issue of instruction methodology. Resident training, on-the-job training and home study courses are producing world-class workers. These an other methodologies should get the equal attention of federal policy makers.

Rick, Bill and Tony – Three survivors from the Forgotten Half

"Often a new engineer will come to us for an engineering solution, which they must then approve. They have little or no experience with the problems we deal with every day. Why are new engineers not capable of doing this work?" *Paraphrased from a conversation with Rick from the Navy's aircraft repair depot in Norfolk, VA, February, 1993.*

Description: Three "30 something" fellows from the Tidewater Virginia area who came through separate, but similar technical training systems. Rick came through the civilian machinist apprenticeship sponsored by the U.S. Navy. He has moved up through the ranks and now works in F-14 fighter plane repair project scheduling. He counts his apprenticeship background as a major plus, and feels that degreed engineers would be well served to start at the apprenticeship level also. Bill began a pipefitter apprenticeship at a commercial shipyard and has since gone into his own plumbing business. The pipefitter apprenticeship provided a firm skill foundation and Bill recommends the experience for others. Tony got his start while in the U.S. Navy. His area of expertise is aircraft frames and structures. The apprentice-like training he received in the Navy allowed him to successfully transition into civilian life and he now works for a defense contractor who maintains aircraft gunnery targets. Tony is currently a project manager for a Canadian Defense Forces target contract with his firm.

All three men came through different versions of U.S. apprenticeships ... one federal government, one private sector, and one military. All three men shared similar experiences ... their training ranged from very good to unacceptable and they could readily see how it could easily be improved. They all experienced the cultural stigma of not going to college, but they were proud of the skills they acquired and felt their apprenticeships helped get them where they are today. They were very critical of the skill set most degreed engineers demonstrated on the job.

Apprenticeship policy implications: The cultural issues surrounding the second class citizenship of anyone who does not go to college and the competence of college graduates to perform their jobs. The engineering and business school reforms suggested in the MIT study,

Made in America (chapter 12 – How Universities Should Change) should be vigorously pursued. The federal government should increase its efforts to highlight the skill set and achievements of the technical workforce. One example is the United States Skill Olympics and international skill competitions such as the International Skill Olympics.¹³ (Dept of Education)

Stonemasons in New York, Theater Hands in the Massachusetts, Soil Soldiers in Arizona and YouthBuild across the U.S

"A lot of these people had a rough time before they came here,' says Bird. 'If they made a mistake and got angry, they thought, Well, that's it. I'm out the door.' I had to help them understand that if they put their best efforts into the job and learned from their mistakes, they were here to stay. One day they'd be teaching young people themselves. That's going to be our greatest achievement: not finishing one tower or two towers or even a cathedral, but seeing the next generation emerge with marketable skills. We're building *people*. That's what we're about, and why I'm here." *From the Smithsonian Magazine, Per Ola, December 1992, page 39.*

Description: This next group of programs demonstrates the variety of organizations, social and business objectives and people utilizing apprenticeships in one form or another.

The Stoneyard Training Institute at the Cathedral of St. John the Divine in New York City. A \$6 million business providing a modern day version of stonemasons. High-tech equipped artisans carve stone for projects across the U.S and Canada. The artisans are local people who have entered a four year apprenticeship under master carvers Alan Bird and Simon Verity, both from England. (*Smithsonian Magazine*, December 1992)

Jacob's Pillow summer theater workshops. A Berkshire Hills, Massachusetts tradition since 1942, this private theater group gives apprenticeship-like experiences for dance, choreography, theater technician and theater management. Has provided career opportunity for hundreds of theater professionals from around the world. (*Historic Preservation*, March 1993)

Soil Soldiers – The Arizona Conservation Corps. State run program that employs 60 – 90 young people (18 –25 year olds) in minimum wage, bone cracking outdoor work. One year program that includes gaining a high school equivalency. "We're committed to not just shaking hands with them after that year and saying, 'see you around,' but giving them the skills to get a good job or the incentive to continue in school." (*Arizona Highways*, April 1993)

YouthBuild. Started in 1988 as a demonstration project in Boston, YouthBuild has grown into a 14 city confederation of independent vocational training programs. Programs emphasize the construction trades and use a combination of on-the-job training (YouthBuild inner city building rehabilitation projects mostly) and classroom instruction. The heart of the program is its leadership training – a combination of "personal and group counseling, peer support, and trainee self-governance."

YouthBuild has recently garnered federal funds under the Housing and Community Development Act of 1992. (Historic Preservation, May 1993)

Apprenticeship policy implications: Locally designed and managed efforts are successfully using apprenticeship to accomplish multiple social objectives. These are national objectives, too. Federal assistance should skillfully exploit the "multiplier" effect of apprenticeship through partnering with state and local groups who are actively engaged in building their communities skill base, providing a second chance to at-risk youths or doing any of the hundred things that must be done to keep a community whole and healthy.

CONCLUSION

After all the reports, all the articles and case studies, I am left with ... faces.

I see Angel Escobar as he passes on his stone carving knowledge to Lisa Young.

I recall my own first days as a Coast Guard recruit when I watch the young, new faces at Piney Point, Maryland begin their own journey into the Merchant Marine.

I see Shawn Wilson as she fabricates a prototype automobile panel, Rick McGrory on the F-14 line as he keeps Navy fighters flying and Minor Miller as he tirelessly defends apprenticeship in his role at the Department of Labor.

I can picture Lt. Col Tom Benes, U.S. Marine Corp pilot and Mechanical Engineer, telling a group of his peers that he personally observed 16 -17 year old West German apprentices working on problems that he first encountered as a third year college student. I remember his bottom line: Vocational training in Germany competes with a college degree in the U.S.

We started this journey with three questions:

- 1) What is the current state of apprenticeship in the United States?
- 2) Is there a role for apprenticeship in 21st century America?
- 3) What, if any, is the legitimate role of the federal government in regards to apprenticeship?

Based on my admittedly limited exposure to the subject, I would have to say that although apprenticeships, as strictly defined by the Federal Committee on Apprenticeship, are not doing very well, the occurrence of "apprentice-like" training is very much on the rise. As organization after organization rediscovers the age old fact that people are the most important resource and as researchers finally convince themselves that human beings by their very nature "learn by doing", apprenticeship in some form has to have a very bright future in the 21st century.

I remain convinced that the appropriate apprenticeship role for the federal government is very limited. Specifically, I think Uncle Sam should assist by:

1. **DOING NO HARM.** The work of preparing citizens and workers is the province of the person themselves, their families, their community, their employer, their state and finally their federal government.
2. **PROVIDING A NATIONAL INFRASTRUCTURE.** Tailor the national information highway to allow schools, data repositories, researchers, and business to communicate with each other.
3. **STIMULATING R&D.** Use R&D funds to stimulate improvements in training methodology, communications, career counseling, cognitive science, standards setting, skill needs assessment, and for benchmarking other systems.
4. **BENCHMARKING INTERNATIONALLY and NATIONALLY.** Monitor how well the competition is doing and share the results with the nation.
5. **COMMUNICATING.** Facilitate communication among team members ... the individual citizen, schools, unions, researchers, trade organizations and businesses.

6. ENCOURAGING APPRENTICESHIP THROUGHOUT THE FEDERAL JOBS SYSTEM. The federal government employs several million people and spends money with the employers of many millions more people. Apprenticeship is good for the federal job system and the federal job system is good for apprenticeship.

7. ENHANCING THE APPRENTICESHIP/BUSINESS COMMUNITY/EDUCATIONAL SYSTEM RELATIONSHIP THROUGHOUT THE NATION.

NOTES

1. U.S. Dept. of Education, Office of Vocational and Adult Education (OVAE) Report – Combining School and Work, page 39.
2. Some of the many fine works which helped frame the debate in the 1980s and 90s are: the William T. Grant Foundation sponsored *A Nation at Risk* (1983), *The Forgotten Half* (1988), and *Youth Apprenticeship in America* (1992); books by Robert Reich, *The Work of Nations*, The MIT Commission on Industrial Productivity's *Made in America*; the *Workforce 2000* research project done by the Hudson Institute for the U.S. Dept. of Labor, the National Center on Education and the Economy study *America's Choice: high skills or low wages!*; the President Bush education strategy "America 2000" and the Secretary of the Labor Commission for Achieving Necessary Skills' "SCANS Report for America 2000".
3. U.S. Dept. of Labor Program Highlights, Bureau of Apprenticeship and Training Fact Sheet ETA-90-5, 1990. This number indicates the total number of people engaged in federally registered apprenticeships. An apprenticeship takes on average three years to complete.
4. Wilfred Prewo, the chief executive of the Chamber of Industry and Commerce in Hanover, Germany writing in the February 12, 1993 issue of the Wall Street Journal. He points out that apprentice training is expensive (about \$10,500/person), but industry is absolutely convinced that it is a sound investment that pays off in international competitiveness.
5. U.S. Dept. of Labor pamphlet, *Apprenticeship Past and Present*, pages 4-16.
6. U.S. Office of Technology Assessment report, "Competing in the New International Economy, OTA-ITE-457, 1990, page 54. Data validated March 1993 in conversation between Keith Boi and Minor Miller of the Federal Committee on Apprenticeship.
7. Ibid, page 20.
8. Ibid, page 128.
9. American Society for Training and Development report, "America and the New Economy," pages 107 – 121. The details provided in these 15 pages would serve as an excellent starting point for any apprenticeship program development efforts.
10. The ASSET program is currently one of several entry points into Ford dealership service employment. Other ways to become a Ford service technician include completing a high school auto shop program, completing some other company sponsored program or starting at a dealership at the most rudimentary repair level and learning the rest on-the-job and with additional courses. Over time, as automobiles become more complex and manufacturer specific, corporate training programs such as ASSET may become the only entry points into the auto repair business. It raises an interesting question about the future of high school auto shop programs and their ability to provide dealers with trained personnel.
11. Boi/Lundquist conversation 4/13/93, and EPA Grant X820640-010 under the EPA "TRAIN" management plan.
12. 1981 Department of Labor study prepared by CSR, Inc of Washington, DC. Study result 6.2.2 (page 178) state: "Employers who cooperated with Youth Apprenticeship Programs (YAP) were attracted more by the Program's emphasis upon screening and training of entry level workers than they were by the stipends offered." and 6.2.5 (page 180) "The

stipends provided to employers by the YAPs did not generate positive outcomes commensurate with their costs."

13. The Department of Education has a series of fact sheets that are available from the Office of Vocational and Adult Education (202) 205-5440. These offer ideas for skill contests, program awards and project recognition.

References:

Belasco, James, *Teaching the Elephant to Dance*, Crown Publishers, (New York, NY), 1990.

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- The Job Training Partnership Act (P.L.97-300; 96 Stat. 1322) October 13, 1982, amended 1986, 1988, 1990, 1991.
- The High Skills, Competitive Workforce Act of October 1, 1991. The Bill remains in Senate Committee as of this writing.

Appendix A:

**Strengthening Linkages Between
Apprenticeship and Other Federal Job Training
Programs – A Background Paper**

**POC: Mr. Minor Miller, Executive Director, Federal Committee
on Apprenticeship, U.S. Department of Labor. (202) 219-6345**

STRENGTHENING LINKAGES
BETWEEN APPRENTICESHIP AND
OTHER FEDERAL JOB TRAINING PROGRAMS

A BACKGROUND PAPER



October 1992

PREPARED FOR

THE FEDERAL COMMITTEE ON APPRENTICESHIP

BY

Minor R. Miller
Executive Director
Federal Committee on Apprenticeship
U. S. DEPARTMENT OF LABOR
Office of Work-Based Learning
Employment and Training Administration

APPRENTICESHIP ADVANTAGES

TAX CREDITS

REDUCE WASTE

STABLE WORK FORCE

QUALIFIED SUPERVISION

SAVE TIME

REDUCE SKILL SHORTAGES

QUALIFIED EMPLOYEES

EMPLOYEE MORALE

NO COST CONSULTATION SERVICE

SAVE MONEY

Prepared for
THE FEDERAL COMMITTEE ON APPRENTICESHIP
APPRENTICESHIP LINKAGES

INTRODUCTION

New challenges facing the U. S. economy will demand quantum increases in the quality and quantity of skill training provided the American work force. Much of the responsibility for accomplishing this training will necessarily rest with business and labor through an accelerating pace of technological change to major shifts in the demographics of the work force and growing competition in international trade.

The nature of changes facing the work force suggests the need for a more systematic and comprehensive approach in industry and workers' investment in acquired skills. A basic premise of the concept of registered apprenticeship is that the system serves serious training needs in the accelerating pace of technological change to major shifts in the demographics of the work force and growing competition in international trade.

The nature of changes facing the work force suggests the need for a more systematic and comprehensive approach in industry and workers' investment in acquired skills. A basic premise of the concept of registered apprenticeship is that the system serves serious training needs in the accelerating pace of technological change to major shifts in the demographics of the work force and growing competition in international trade.

While apprenticeship has proved effective where used, it has been concentrated largely in relatively few traditional occupations until the last decade. The fact that apprenticeship can and does serve a much broader role is established by the actual expansion of the experience in other countries. The projected trends in which mass production can flourish. While the environment in which age expansion and will place a premium on highly-skilled workers and minimal apprenticeship system. The latter has long been the str.

The essential elements of apprenticeship that suggest it as a model for a broad-based training system include:

- ♦ A structured process for providing training in a substantive skill or set of skills that are or can be accorded recognition by an industry;
- ♦ Nationally recognized certification of acquired skills through the award of a Completion Certificate based on recognized industry credentials;
- ♦ Training designed and administered by the private sector at very little cost to the government; (NOTE: The payment of taxes on the wages paid to apprentices more than offsets the Federal funds invested.)
- ♦ Applicability to small businesses as well as large firms.

BACKGROUND

Numerous studies predict the need for a highly skilled, literate, and trained work force in the 1990's and beyond, and identify that the majority of new entrants will be women, minorities, and immigrants. Many of the entrants will be at risk youth, displaced homemakers, disadvantaged workers, AFDC welfare recipients, previously incarcerated individuals, dislocated workers, and others with inadequate training to be productive members of the work force.

The registered apprenticeship system of training follows a structured training plan, which takes the individual through a series of on-the-job experiences coupled with theoretical and technical related classroom instruction. The training plans have clear objectives with reachable goals based on industry established credentials. Upon completion apprentices receive a nationally recognized completion certificate which is essential for promotion and reemployment opportunities for the worker.

The registered apprenticeship system of training can and should play a key role in the development a highly skilled work force for the future of America. The "quick fix" approaches of the past have come under close scrutiny and criticism. A worker goal oriented approach must be explored and, just perhaps, registered apprenticeship may be the solution. Apprenticeship is the product of private industry, labor, management, public/private organizations, and government (Federal, State, and Local) working together cooperatively.

The Bureau of Apprenticeship and Training (BAT) has been involved in the negotiation and development of linkages of apprenticeship with other training programs and activities for many years.

... included Federal, State, and local governmental
... education and public entities; nonprofit organizations;
... and other organizations; labor and management
... fall into four categories of partners in those linkage efforts;
... institutions or agencies; trade, governmental, and
... organizations; and the specific apprenticeship
... programs.

The linkage partnerships are supported in two general approaches;
One is by formally established means such as memoranda of
understanding and/or advisory groups. The other is through
informal mechanisms such as maintaining personal contact of
distribution of "newsletters", exchange of correspondence,
of information, and linkage participants. In both the commitment
and program staff and other means, roles, and the formal
responsibilities of all of the objectives, roles, and the formal
arrangements also indicate the partners, roles, and the formal
terminating the agreements as needed.

In May, 1985, a Circular was issued by BAT to the BAT Regional
Directors and field staff urging them to work with State and
local government and field staff to establish apprenticeship steering
committees, particularly in those States where the Secretary of
Labor has not approved a State Apprenticeship Agency. The
purposes of those Apprenticeship efforts were to assist BAT as a possible
means for not expanding apprenticeship with the programs of
and State BAT promoting and have steering committees and to
effective agencies in some States and in promoting and to
expanding apprenticeship. Such cooperative efforts have been an
steering committees in Texas and Arkansas and in promoting and
labor officials, and State and local government consist of employers,
BAT staff in the promotion and expansion of the use of assisting
apprenticeship.

EXISTING AND POTENTIAL LINKAGES

The BAT has been in the past and currently is engaged in the
development and implementation of many linkage arrangements,
Some of the major national efforts in that regard are indic-
in the "Background" section above. Existing linkages are indic-
State or local basis. This section describes some effort
currently existing apprenticeship linkage activities
indicates potential linkages with other training

enticeship (STA) activities were begun by DOL-
1970's as 8 demonstration projects with funds
of in-school apprentices were to demonstrate the use of
skilled trades; and to ease the school-to-work transition in
OUTH.

An evaluation of those projects was completed in August, 1981.
That evaluation found that participating students reported a high
level of job satisfaction, tended to be more occupationally
stable, earned significantly higher wages in post-high school
employment, tended to be better job performers, and strongly
endorsed the STA program. The evaluation of participating
firms, were more attracted to the program's emphasis on business
and training of entry level workers than they were small school
stipends offered, and were very satisfied with the screening
of young workers, and reduced the negative stereotypes on business
programs on a local area basis and such programs now are in
operation in several states and high schools. These programs
the STA linkage programs include high schools, State or local
Departments of Education, labor organizations, and BAT concerning
employer organizations, labor organizations, and BAT concerning

A later evaluation in 1991 of some STA programs found that there
was a very high retention rate of students registered in
programs with high retention rate of students registered in
Huntsville, Alabama, where one STA program reviewed in such
of about 40 participants in the 5-year period (1987-1991) or out
operation of the STA programs and one of those entered the full
military service and the other went on to college.
During the 1991-1992 school year there were 206 students enrolled
in the STA program statewide in Alabama and almost 80 percent of
those students entered full time apprenticeship programs after of
graduation. There were 143 companies, mostly small businesses
with no prior apprenticeship experience, representing 46
participating were female. About 40 percent of the students

B. JOB TRAINING PARTNERSHIP ACT (JTTPA)

The Job Training Partnership Act (JTTPA) was enacted
replacement of the former Comprehensive Employment
Act (CETA). The Department of Labor prepared

...ance Guide" for the coordination of
 the has not been prepared under the CETA Program. A
 with the State governments. A
 arrangements have been developed with individual local Private
 Industry Councils (PICs) by BAT. Many BAT field staff currently
 serve as members of or advisors to local PICs for such linkage
 Coordinating Committees. The negotiations for a uniform degree of
 arrangements certainly have not met with a uniform degree of
 success across the Nation and do not exist in all States and
 local areas.

At the state and local levels JTPA contracts with agencies to
 provide education and training to individuals who are eligible
 for JTPA services. These may include public or private nonprofit
 entities, including State and local governmental agencies; labor
 organizations; industry associations; joint labor-management labor
 committees; and community based organizations. The BAT staff
 work with all of those entities on a regular on-going basis at
 the State and local levels. BAT and/or State Apprenticeship
 Agencies have established and cooperative efforts, many of
 resulting from those coordinated and cooperative efforts, many of
 them with little or no financial assistance.

C. CARL PERKINS VOCATIONAL AND APPLIED TECHNOLOGY EDUCATION ACT

The Carl D. Perkins Vocational Education Act of 1984, Title IV,
 Part B, Section 411e, provided that within one year of the
 Secretaries of Labor and Education should develop and implement a
 plan for greater coordination between such vocational education
 programs and apprenticeship programs. That section education
 provided that "linkages" and that program should further
 apprenticeship training and programs of related programs a
 performance standards (particularly with respect to
 apprenticeship programs) and that program evaluation and
 that the Secretaries shall establish such other instruction, and
 cooperative efforts as are considered feasible and appropriate.

An "Interagency Agreement" between the U. S. Departments of
 Education and Labor to promote apprenticeship programs and
 developed and signed by Secretaries Bennett and Brock, was
 1985. A joint letter was sent to each State and appropriate
 Secretaries Bennett and Brock advising them of the Perkins
 copy of the signed agreement. They were advised that
 State Apprenticeship, Vocational Education, and

es and carry out the provisions of the
Apprenticeship Act (BAT) and the Department of Education and
the reauthorization of the Perkins Act referenced the provisions of the
BAT/SAC/VocEd.

The Carl D. Perkins Vocational and Applied Technology Education
Act of 1990 (Perkins Act) was enacted on September 25, 1990, as a
reauthorization of the Perkins Act. That TAG referenced the provisions of the
Act of 1990 regarding apprenticeship, described the provisions of the
addition of a section on "Tech-Prep Education," and provided some sample

The BAT staff currently have developed many working agreements
under the Perkins Act of 1990 for cooperative linkages with the
vocational education community which have achieved some degree of
success. The successful implementation of these plans, however, is
has been less than uniform on a national basis, largely due to a
lack of adequate BAT resources to follow through with the shift of
implementation on a State-by-State basis, and to the shift of
program direction from the national to the State and local level.

The Perkins Act of 1990 does provide for strong linkages with and
considerations for apprenticeship. Some of those major
provisions are:

Section 118 provides that the States must assure that all
individuals who are members of "Special Populations" specifically
provided equal access to recruitment, enrollment programs and
placement equal access to recruitment, enrollment programs and
specifically included in those provisions and for the use of
funds for that group. Special provisions and for the use of
disadvantaged students, disabled students, and institutions of higher
nontraditional students.

Title III, Part E, "Tech-Prep Education" specifically
includes apprenticeship programs as eligible partners in
Tech-Prep programs. Apprenticeship programs also are in
included in the definition for "institutions of higher
education."

Title IV, Part A, requires the General Accounting Office
make a national assessment of vocational education re-
the services provided to apprenticeship under the Na-
Apprenticeship Act of 1937.

Title IV, Part B, requires the GAO to conduct
study of the Vocational Education system

an analysis of the desirability, advantages, and disadvantages of a nationwide apprenticeship program in the U. S. similar to the German system.

D. JOB CORPS

The Job Corps is a Federally administered national employment and training program designed to serve severely disadvantaged youth 16 through 21 years of age. Enrollees are provided food, housing, education, vocational training, medical care, counseling, other support services, and cash living allowances at Job Corps Centers. Some centers provide child care and a few of the centers can accommodate non-residential enrollees who participate in training center activities during the day.

The program prepares youth for stable, productive employment, and entrance into vocational/technical schools, junior colleges, or other institutions for further education and training. Enrollees may stay in the Job Corps for up to two years, although the average length of stay is about eight months. They are given help in finding a job or enrolling in further education when they leave.

Some Job Corps centers are called civilian conservation centers and are operated by the U. S. Departments of Interior and Agriculture. The remaining centers are operated under contracts with the U. S. Department of Labor.

Agreements and arrangements have been made with some Job Corps Center managers by apprenticeship program sponsors, labor organizations, joint apprenticeship committees, and BAT staff to develop specialized training for apprentice applicants who fail to meet the minimum registration requirements. Upon successful completion of that specialized training the students then are accepted and registered into an apprenticeship program.

E. FAMILY SUPPORT ACT OF 1988 - JOBS

The Family Support Act was enacted in October, 1988. Title II of that Act creates a new education, training, and employment program known as the Job Opportunities and Basic Skills Act (JOBS) program. The purpose of the JOBS program is to assure that Aid For Dependent Children (AFDC) clients obtain the education, training, skills, and employment that will help them avoid long term welfare dependence.

The Act required each State to have a JOBS program under a plan approved the Secretary of Health and Human Services (DHHS) by October 1, 1990. It also requires that the program be available to each subdivision of the State, where it is feasible, by October 1, 1992.

Implementing regulations for the Family Support Act (FSA) were published in the Federal Register in January, 1991. The regulatory provisions apply both to the JOBS program and work-related activities authorized in connection with the Aid for Dependent Children (AFDC) program under Section 1115 of the Social Security Act. Section 251.1 of the FSA regulations defines the program activity conditions. One of those requirements is that training shall be appropriate and the nature of the training shall meet the employers' requirements so that the participants will be in a competitive position within the local labor market. The training must also be likely to lead to employment. Apprenticeship satisfies those requirements.

The impetus for the development and enactment of the Family Support Act was, in part, the success of employment/training programs for Minority Female Single Parents funded by the Rockefeller Foundation. The FSA was developed largely on the basis of those demonstrations and other experiments that tested employment/training programs for low-income or welfare single mothers.

Studies show that the complexities of such programs revolve around three considerations - basic skills, job skills, and child care. One of the demonstration sites intermingled or combined remedial or basic education skills with occupational skills training. That site was found to be the most effective with the highest rates of participation and the strongest impact on employment and earnings. Those attending integrated training saw the connection to future performance on the job. Those participants had gains in employment and earnings that were more than twice that of participants in the other programs. Thus, the report indicates that the integrated or combined basic education with occupational skills training approach, such as the apprenticeship system, is more efficient and effective because it requires less time and fewer resources to produce a job-ready worker.

Additional efforts should be made to work with the JOBS program to promote apprenticeship as an option for education and training.

F. WORKER ADJUSTMENT AND RETRAINING NOTIFICATION ACT

The Worker Adjustment and Retraining Notification Act (WARN) requires covered employers to give notice to workers at least 60 days in advance of plant closings and mass layoffs. Together with the Economic Dislocation and Worker Assistance Act (EDWAA) and the Trade Adjustment Assistance (TAA) program, WARN is part of a comprehensive approach to aid dislocated workers. (NOTE: See discussion on EDWAA below.)

DISLOCATION AND WORKER ADJUSTMENT ASSISTANCE ACT

Dislocation and Worker Adjustment Assistance Act
 It also includes provisions of the Job Training Partnership Act
 certain their for assistance whose previous employment loss means and they the TAA program.
 and others long-term unemployed persons, some displaced homemakers who
 natural disasters.

EDWAA emphasizes a comprehensive, timely array of retraining and
 re-employment services tailored to the workers' individual needs;
 Major activities and services under EDWAA include:

Retraining Services. These include classroom, occupational
 skills, and/or on-the-job training. Basic and remedial
 education may be provided.

Needs Related Payments. These include payments to help them
 dislocated workers who have exhausted their unemployment
 insurance may receive related payments to help them
 complete their training.

Reemployment Services. These include: outreach and intake,
 development of individual readjustment plans; labor market
 information; and relocation assistance and pre-dislocation
 readjustment programs.

While the BAT has not been assigned any specific roles or
 responsibilities under EDWAA, the individual staff have worked
 with and assisted State and/or local dislocated worker have worked
 opportunities in providing information regarding apprenticeship
 programs. Such dislocated workers to the new credit for their
 occupation experience as it may relate to the given credit for their
 the registered and cooperative efforts by BAT staff have resulted in
 the in the development of dislocated workers in apprenticeship programs
 interest and efforts of the persons (employers) on the
 committee or group.

H. TRADE ADJUSTMENT ASSISTANCE (TAA)

Trade Adjustment Assistance (TAA) is a program to assist
 who become unemployed or underemployed as a direct
 increased imports. The program assists workers
 suitable employment through the provision of
 allowances (TRA), Job search and relocation

- ◆ Recipients of Aid to Families with Dependent Children who are eligible for assistance and have received it for 90 days immediately prior to being hired.
- ◆ Economically disadvantaged summer youth who are 16-17 years of age on the hiring date and have not previously worked for the employer.

For most target groups, employers may claim a credit of 40 percent of first year wages up to \$6,000 for a maximum credit of \$2,400. For economically disadvantaged summer youth employees, employers may claim a credit of 40 percent of first year wages up to \$3,000, for a maximum credit of \$1,200.

An employer must request certification for the individual prior to or on the date they start to work. The employer must retain the employee for at least 90 days or 120 hours to claim credit. The credit applies only to employees hired into a business or trade.

The program is administered at the Federal level by DOL, Internal Revenue Service, U. S. Treasury, and U. S. Department of Education.

J. EMPLOYMENT SERVICE;

The public employment service was established under the Wagner-Peyser Act of 1933, which was amended in 1982 to give more authority to State Governors. Funds are allocated by the Federal government to each State to plan and administer a labor exchange program which best responds to the needs of the State's employers and workers.

The public employment service is available to all those legally authorized to work in the United States. In addition, it helps to implement or administer other laws, such as the Federal Unemployment Tax Act and the Immigration Reform and Control Act.

Public employment service assistance, including employability assessment and referral to training, is free to job seekers. Among the Employment Service's activities to match employer and jobseeker needs are circulation of information about jobs, training opportunities, and labor market occupational demand and supply information.

The Employment Service provides services to apprenticeship program sponsors in the selection and referral process. All States did provide testing services using the General Aptitude Test Battery (GATB) for use in the selection of apprentices until questions were raised regarding the validity of part of the test. Subsequent to that several of the States have discontinued that

testing service. Efforts could be made to have the Employment Service provide increased services in the promotion of the use of apprenticeship both by employers and potential apprentices.

K. OTHER AGENCIES/ORGANIZATIONS:

In addition to the above described programs and potential linkage activities, the BAT works with and coordinates apprenticeship with many other agencies or organizations. Some of these are:

♦ **INDIAN RESERVATIONS:** The JTPA contains provisions for the DOL to provide assistance to Native Americans. The DOL sponsors special employment and training programs designed to help jobless Native Americans (Indians, Eskimos, Aleuts, Hawaiians, and other persons of Native American descent) who are economically disadvantaged, unemployed, or underemployed. These programs offer job referrals, job training, counseling, and other employment related services. The programs are administered by qualified Native American groups or organizations with Department of Labor funds provided under JTPA.

The DOL and BAT have no formalized agreements or arrangements to link apprenticeship with those programs. The BAT, however, through individual staff efforts, has developed and implemented many apprenticeship programs with the cooperation and coordination of the Indian Tribes or Reservations. Many of the programs are in the construction and building trades industries. In other instances the programs have been developed to assist the Tribes in helping themselves, for example, the occupations of dental technician and paralegal assistant. The Wind River Indian Reservation was faced with insurmountable legal problems and pending cases. The BAT assisted them in developing an apprenticeship program for training paralegal assistants to help them in overcoming their problems. The apprenticeship program standards developed for that purpose now are being used by legal firms outside the reservation.

♦ **FEDERAL/STATE CORRECTIONAL INSTITUTIONS:** The BAT and the SAC's staffs have worked with many Federal and State correctional institutions or facilities in developing and implementing apprenticeship programs. These programs are used to train both the inmate population and the correctional facility staff. The inmate apprenticeship programs include a wide range of occupations such as building trades, automobile mechanics, dental technicians, maintenance and repair occupations, etc. The occupations for the staff include similar occupations plus correctional officers.

♦ VETERAN'S EMPLOYMENT AND TRAINING SERVICE: Several BAT State Directors have developed cooperative arrangements and agreements with State Veterans Employment Representatives for the promotion of apprenticeship and the recruitment of veterans as apprentices. A national agreement was developed some time ago between the Veteran's Employment and Training Service and BAT.

♦ OTHER STATE AGENCIES: BAT staff have developed cooperative and working arrangements with various State governmental agencies for the promotion and coordination of apprenticeship activities. For example, The BAT State Director in West Virginia in cooperation with the State Legislature was successful in gaining the enactment of legislation which provided for the use of apprenticeship in training staff for the State agencies.

♦ OTHER LINKAGES: The BAT and SAC staffs have worked with numerous Federal, State, and local nonprofit and private organizations and agencies for the promotion and expansion of apprenticeship and to expand the participation of women and minorities. These include organizations such as the YWCA, Chambers of Commerce, NAACP, National Urban League, Women in Construction, and Tradeswomen, Inc.

JOB TRAINING 2000:

The objective of the Job Training 2000 program announced in January, 1992 is to create a comprehensive and coordinated job training system for the Twenty-First Century to respond to the needs of both employers and employees and to assure that American workers are the world pacesetters for workforce quality and earnings. The announcement identified about 60 current training programs and activities that might be combined or coordinated in that program.

As described above, linkages and coordinating activities currently exist between the traditional registered apprenticeship system and many of those programs identified in the Job Training 2000 program. It would appear that registered apprenticeship is an essential partner in that program from an established and cost effectiveness standpoint.

REFERENCES:

- ▶ DOL Program Highlights - Apprenticeship
- ▶ DOL Program Highlights - Trade Adjustment Assistance
- ▶ DOL Program Highlights - Job Corps
- ▶ DOL Program Highlights - Economic Dislocation and Worker Adjustment Assistance Act

- ▶ DOL Program Highlights - Worker Adjustment and Retraining Notification Act
- ▶ DOL Program Highlights - Targeted Jobs Tax Credit
- ▶ DOL Program Highlights - Employment Service
- ▶ DOL Program Highlights - Native American Program
- ▶ BAT Regional Directors Memo No. 87-55, April 20, 1987, Apprenticeship Linkage Possibilities
- ▶ BAT Circular No. 86-16, February 20, 1986, Establishment of State Apprenticeship Steering Committees
- ▶ BAT Bulletin No. 92-08, July 17, 1992, Apprenticeship Standards for National Association of Housing and Redevelopment Officials (NAHRO)
- ▶ Job Training 2000 - Questions and Answers
- ▶ Lyndon B. Johnson School of Public Affairs Report "Coordination of State and Federal Apprenticeship Administration
- ▶ Battle Creek School to Apprenticeship Program, Summary Report, June, 1990
- ▶ Alabama School to Apprenticeship Linkage Report
- ▶ BAT/JTPA Apprenticeship Linkage Programs - Regions IV, VIII, and X
- ▶ Meridian Corp. Report, September 30, 1988, How Can Apprenticeship be More Effectively Linked to Education System
- ▶ CSR, Inc., Report, August, 1988, Impacts of New Youth Initiatives in Apprenticeship (School-to-apprenticeship)
- ▶ BAT-Alaska Department of Labor-Veterans Affairs Linkage Agreement
- ▶ Carl Perkins Vocational and Applied Technology Act of 1990
- ▶ Interagency Agreement between U.S. DOL and U.S. DOE, October 17, 1985, under Perkins Act.
- ▶ Action Plans for Interagency Agreement (DOL-DOE)
- ▶ Apprenticeship and Vocational Education Technical Assistance Guide, November, 1986, under Perkins Act
- ▶ State Linkage Action Plans for Apprenticeship Training, April, 1990, by Western Regional Apprenticeship and Training Conference.
- ▶ BAT Colorado - Federal Correctional Institution Report of Linkage for Dental Assistant, November, 1988
- ▶ CSR Inc., and Meridian Corp. Report, March, 1991, Analysis of Linkages in Selected School-to-work and Career Advancement Transition Programs
- ▶ Numerous BAT Significant Activities Reports and Apprenticeship Conferences

Appendix B:

**A Strategic Plan for Promoting and Expanding
Apprenticeship in the U.S. – Phase I (April 28,
1992) and Phase II (November 5, 1992)**

**POC: Mr. Minor Miller, Executive Director, Federal Committee
on Apprenticeship, U.S. Department of Labor. (202) 219-6345**

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**PROMOTING AND EXPANDING
APPRENTICESHIP**

**A Strategic Plan for Preparing
America's Work Force of Tomorrow
(Phase I)**

Prepared by

**The Federal Committee on
Apprenticeship**

**U.S. Department of Labor
Employment and Training Administration
Office of Work-Based Learning
Bureau of Apprenticeship and Training**

Approved:

April 28, 1992

INTRODUCTION/RATIONALE

Work force preparation has risen to the top of America's domestic policy agenda. President Bush's recently announced Job Training 2000 initiative illustrates the growing sentiment among scores of policy makers, industry and labor leaders, and educators that the country's approach to worker training and education is in need of an overhaul. Factors contributing to the push for educational reform include reports of dismal student performance and alarming school dropout rates, a sagging national economy, and perceived threats to economic recovery and long term growth by foreign competitors.

Many analysts agree that maintaining a competitive edge requires investing more in the training of American workers and adopting education and training strategies that respond better to the needs of the workplace. The search for educational strategies that fulfill these requirements has focused attention on one of the oldest and most respected forms of training -- apprenticeship. Apprenticeship is a training strategy that a) combines supervised, structured on-the-job training with related theoretical instruction and b) is sponsored by employers or labor/management groups that have the ability to hire and train in a work environment. The content of training, both on-the-job and related instruction, is defined and dictated by the needs of the industry. Apprentices learn by working under the supervision of masters in the trade, craft, or occupation; are paid according to a predefined wage progression scale; and receive a Certificate of Completion, which is recognized by federal and state governments, employer associations, labor organizations and individual employers, certifying mastery of skills upon completion of training. In the U.S., apprenticeship constitutes a major form of training for the building trades and numerous manufacturing industries. In many European countries, apprenticeship programs span more industries and serve as the primary form of training for work-bound youth.

Because true apprenticeship programs encompass the critical features that most educational reformers are striving to achieve, systematic efforts should be made to strengthen and expand the nation's existing apprenticeship system. The following is the first phase of a strategic plan that is designed to achieve this objective. This phase, which reflects the belief that a relatively modest investment in a proven, tried and true system will reap enormous benefits almost overnight, focuses on efforts that the Federal government can undertake quickly and that build upon existing activities without creating a new bureaucracy, new regulations, and the expenditure of large amounts of taxpayers' dollars. Phase II, which will be issued at a later date, will focus on issues that require additional investigation and deliberation such as incentives for employer participation, sources and availability of related instruction, linkages with other Federal programs, and strategies for recognizing achievements in apprenticeship. It is important to note that states are also heavily involved in apprenticeship. Although initially beyond the scope of this plan, states should also be looking for ways to improve their present funding commitments to apprenticeship, which even now exceed Federal levels. Adoption of the proposals contained herein, however, should have widespread benefit and are intended to enhance the operation of the apprenticeship system at both the Federal and state levels.

PURPOSE AND GOALS

Americans deserve to be proud of their apprenticeship system. It produces some of the world's most highly skilled, competent workers in their crafts and trades. It operates under well-defined laws and regulations designed to safeguard the welfare of the apprentice and provide education and training that meets the highest standards of excellence. It prepares people perhaps better than any other training strategy to perform effectively in the workplace -- and to do so immediately upon beginning their employment/training. As a recently published report by the U.S. General Accounting Office (GAO) notes, "One proven method of developing high-skilled workers is apprenticeship."¹

Despite these capabilities, the system has barely tapped its potential. This is due, in large measure, to the failure to invest sufficient resources in ways that would stimulate apprenticeship growth and expansion. A more concerted effort to strategically target resources would accomplish a great deal. For example, it would: lead to the development of new or expanded apprenticeship programs in both traditional and non-traditional industries, programs that would meet employers' pressing needs for skilled workers; encourage greater participation of women, minorities and other underrepresented groups in apprenticeship programs, a top priority among policy makers and within the apprenticeship community; and create new career path opportunities for non-college bound youth or young adults whose career options have not been clearly defined. In times of limited resources, this is an investment that is particularly sensible. The cost-effectiveness of apprenticeship is clearly demonstrated by the fact that, under current Federal and state appropriations, the cost per apprentice is slightly more than \$200.00. This is a tiny fraction of what is spent under other Federal training programs. Moreover, as a practical matter, investment in apprenticeship is essentially budget neutral. The major training costs for apprenticeship are more than recouped by the private sector -- that is, employers and/or labor-management committees. The funds invested in apprenticeship by the Federal and State governments are more than recouped through the Federal, State, and local taxes paid by apprentices on their wages.

In short, apprenticeship holds much promise for meeting the interrelated needs of both employers and future work force participants. The purpose of this strategic plan, therefore, is to encourage activity that will enable the U.S. apprenticeship system to realize its greater potential. Its goals are as follows:

- to encourage the development of apprenticeship programs in a broad array of industries with occupations that lend themselves to the apprenticeship training model;
- to increase the awareness of opportunities offered by apprenticeship across the general population;

¹ *APPRENTICESHIP TRAINING Administration, Use, and Equal Opportunity*, U.S. General Accounting Office. GAO/HRD-92-43, March 1992, p. 8.

- to assist training sponsors in their efforts to recruit women, minorities and other underrepresented groups by strengthening existing efforts in this regard;
- to complete the development and implementation of a comprehensive national training program/apprentice registration and tracking system; and
- to promote high quality apprenticeship training programs that provide the best possible training in safe learning and working environments.

This strategic plan contains three components: apprenticeship promotion and marketing, the national registration and tracking system, and quality. It describes the current scope of effort that is under way at the Federal level in each area, the shortcomings of these efforts, and proposals to expand or improve existing activities. It assumes that efforts to date have laid a strong foundation that can serve as the building blocks for strengthening and broadening apprenticeship in the U.S.



PROMOTING AND MARKETING APPRENTICESHIP

Currently, there are approximately 43,000 registered apprenticeship programs in the United States operated by an estimated 500,000 employers and training some 300,000 apprentices. Of these programs, the overwhelming majority (at least two-thirds) are in the building and metal trades and manufacturing industries, with the remainder scattered across other types of businesses and industries.² The U.S. Department of Labor's Bureau of Apprenticeship and Training recognizes at least 800 apprenticeable occupations.

The General Accounting Office's recently completed report on apprenticeship cited a decline in enrollment in apprenticeship programs.³ This may be due to declining public and private sector support for apprenticeship; lack of promotion with employers, educators, employment counselors, and prospective apprentices; and general economic conditions. Federal support for apprenticeship has declined precipitously in recent years. According to the the General Accounting Office, federal expenditures for apprenticeship dropped by about 30% in 1990 dollars between 1980 and 1990. In 1980, more than \$22 million (in 1990 dollars) were spent by the Federal government on apprenticeship; by 1990, expenditures totalled approximately \$15 million. This

² Bureau of Apprenticeship and Training, U.S. Department of Labor.

³ *APPRENTICESHIP TRAINING Administration, Use, and Equal Opportunity*, U.S. General Accounting Office, GAO/HRD-92-43, March 1992, p. 17.

represents less than 1% of all funds expended by the U.S. Department of Labor on training.⁴

Apprenticeship programs are registered and monitored by the U.S. Department of Labor's Bureau of Apprenticeship and Training (BAT) and 27 state apprenticeship agency offices. The BAT consists of 130 regional, state, area, and local offices (10 regional, 50 state, and 70 area and local offices). Currently, total BAT program staff consists of 12 professional and 5 clerical staff in the national office, and 162 professional and 63 clerical staff in regional, state and area offices (15 states and 42 area offices have no BAT clerical personnel whatsoever). These staffing levels represent a more than 40% decline since 1980.⁵

Staff financed by individual states are equally meager. According to the General Accounting Office, state apprenticeship agencies employ 309 full-time staff across the entire country. However, there are no state-funded staff in 23 states, so these states rely entirely on the Federal government for program registration, monitoring and development.⁶ The bottom line is this: the number and distribution of training programs across U.S. industries and the number of apprentices is small relative to the potential demand for programs and training slots. But little can be done to educate either employers or prospective applicants about the opportunities offered by apprenticeship until there are adequate numbers of professionals and support staff who have the requisite supplies, equipment, technical assistance capability, materials and travel resources needed to do the job. Current resources must be bolstered and targeted to priority areas in order to encourage the development of apprenticeship programs that are ripe for this training model.

To address this, carefully planned and executed efforts that build upon existing initiatives need to be undertaken to promote apprenticeship. Such efforts must involve a two-pronged strategy that seeks to both develop new programs as well as to expose potential program applicants to career opportunities through apprenticeship. Efforts in this arena should take two principal forms: 1) providing information about apprenticeship (including benefits and advantages of apprenticeship), along with technical assistance regarding program development, to prospective program sponsors; and 2) conducting marketing and outreach efforts to both the public-at-large as well as to targeted groups (e.g., women, minorities, parents, school guidance counselors, employment counselors, etc.) in order to increase their awareness of opportunities in apprenticeship programs.

⁴ *APPRENTICESHIP TRAINING Administration, Use, and Equal Opportunity*, U.S. General Accounting Office, GAO/HRD-92-43, March 1992, p. 18.

⁵ Bureau of Apprenticeship and Training, U.S. Department of Labor, and U.S. General Accounting Office.

⁶ *APPRENTICESHIP TRAINING Administration, Use, and Equal Opportunity*, U.S. General Accounting Office, GAO/HRD-92-43, March 1992, p. 9.

Presently, there are some limited activities of this nature being carried out by the Federal government, states, and individual program sponsors. According to the GAO, Federal apprenticeship and training representatives spend approximately one-fifth of their time promoting apprenticeship while state agency personnel devote approximately 10% of their time on apprenticeship promotion.⁷ These levels are inadequate, but they are constrained largely by very limited funds for staff and travel. In the current fiscal year, for example, the anticipated average annual travel allocation for BAT professional staff members is \$154 per month and \$1,844 per year. Moreover, specially targeted efforts, like the U.S. Department of Labor's Women in the Skilled Trades (WIST)⁸ initiative and school-to-apprenticeship transition programs, are important beginnings, but they do not go far enough. Thus, all promotion efforts must be strengthened considerably if the goals are to be achieved.

Resource Needs: Experience from across the country suggests that promoting apprenticeship does not require extraordinary measures, but simply investment in tried and true marketing strategies. These include publicity campaigns, wide distribution of printed materials, conferences, etc. Such efforts coupled with technical assistance should prove to be an effective means for realizing gains in the further development of the U.S. apprenticeship system because they would increase the awareness of both employers as well as potential apprentices in the opportunities and benefits presented by apprenticeship.

To accomplish this, relatively minimal funds should be made available for additional staff, travel, printing, and media advertising either through new appropriations or a redirection of current DOL appropriations. Presently available funds fall far short of what is needed to do an effective job in this arena. A minimum of \$19 million more per year should be allocated specifically for promoting apprenticeship among employers and prospective applicants. These funds should be used to increase professional and clerical staff at the national level and in the regional, state and area offices; support travel so that staff can provide critical technical assistance to potential sponsors and perform outreach activities in locations where prospective applicants are likely to be found (e.g., vocational schools, job fairs, employment centers, etc.); conduct targeted outreach for women, minorities, and other underrepresented groups; develop high quality literature (brochures, posters, etc.) about apprenticeship that can be widely distributed to potential sponsors and applicants; and design and implement media campaigns that spark the interest of both employers and potential applicants in apprenticeship. The entire effort to promote apprenticeship should be coordinated nationally but permit tailoring to state and local

⁷ *APPRENTICESHIP TRAINING Administration, Use, and Equal Opportunity*, U.S. General Accounting Office, GAO/HRD-92-43, March 1992, p. 20.

⁸ The WIST initiative consists of a public relations campaign (five brochures aimed at specific target populations, a fact sheet, a general video on women in the skilled trades, radio and print public service announcements, a newspaper column, a resource guide and toll-free number for additional information); EEO compliance enforcement; pre-apprenticeship programs; and so on.

needs in recognition of the diversity that exists across the country (e.g., rural vs. urban, etc.).



COMPREHENSIVE NATIONAL PROGRAM/APPRENTICE REGISTRATION AND TRACKING SYSTEM

For more than a decade, BAT has been attempting to institute a comprehensive, computerized national program/apprentice registration and tracking system. This system is intended to meet a large number of needs. First, it provides the vehicle for staff to keep accurate and up-to-date records about BAT activities, records of expenditures, etc. It is used in conjunction with other data sources to project the supply of and demand for a given occupation in a specific geographic region and, subsequently, to target promotional efforts. It is used to furnish information needed by other agencies (e.g., Wage and Hour Division of the U.S. Department of Labor's Employment Standards Administration for purposes of monitoring Davis-Bacon and Related Acts compliance). It also is designed to meet the ongoing needs of Federal and state governments for current information concerning the status of registered apprenticeship programs and apprentices who are registered in these programs. In this regard, the data base is designed to capture information about date of program registration, numbers of registered apprentices, completion rates, status of compliance reviews, etc. with respect to registered programs and a variety of information about individual apprentices including date of registration, credits earned, number of hours of on-the-job training, date of completion, issuance of completion certificates, etc. The information about program sponsors is needed so that the Federal government and individual states can monitor the quality and performance of registered programs, assure that programs are complying with applicable laws and regulations, and detect early warning signs of difficulties that sponsors may be experiencing that may be correctable through technical assistance or other interventions. Similarly, the information about individual apprentices is needed to monitor the progress of apprentices, provide a mechanism for the transfer of apprentices' records as they move about the country, and so forth. A fully developed system would provide the basis for a national reporting system that would provide information on the number of apprentices trained, their race/ethnicity and gender, occupations, industries, and other pertinent program and planning data.

Unfortunately, implementation of the registration and tracking system has been hampered by insufficient resources. The current configuration of the computer system is simply inadequate. At present, system users consist of BAT's 130 offices, 27 State apprenticeship agencies, 10 regional offices of the Office of Federal Contract Compliance, plus a growing number of employers that transmit program data electronically. For this level of use, the system currently has only 38 ports. An estimated 50 additional ports are needed to assure that the system can be accessed in a timely and efficient manner by all users.

Exacerbating the problem is the fact that there are an insufficient number of personal computers in the BAT regional, state, area and local offices for routine office functions (word processing,

etc.). Consequently, BAT staff are often forced to use the tracking system's equipment for these purposes. This ties up limited phone lines and has the effect of significantly constraining the availability of the system for which it is intended -- input and retrieval of program/apprentice data.

Finally, another major impediment to the efficient functioning of the system is the lack of resources for training. All users, including Federal and state employees and those in private industry who access the system, should be properly trained in its use. Unfortunately, this is not the case today. Many existing Federal and state staff are not fully trained in the use of the system. Likewise, funds are not available to train new staff or other new users. To overcome this, resources are needed to design and implement a comprehensive training process that would be administered on an ongoing basis to existing and new system users.

Resource Needs: In order to institute a useful, fully functioning, efficient tracking and monitoring system, resources are needed for hardware (additional ports, personal computers and printers), software development and improvement, staff, and training, as well as for states' participation in the system (data transfer/communications costs). Investments in these areas will enable BAT to complete the development and installation of the tracking and registration system and maintain its operations on an ongoing basis. Total funds needed to accomplish this effort are \$2.5 million.



QUALITY PROMOTION AND ASSURANCE

The last component of this strategic plan calls for strengthening efforts aimed at assuring that all registered apprenticeship programs meet the highest quality standards. Defining and measuring what is quality in apprenticeship training is a complex task because it involves a great many factors. Most experts would agree, however, that it consists of at least the following: meeting registration requirements; specifying the content of on-the-job training (including both skills and safety training) and related instruction and providing such training in accordance with these specifications; maintaining adequate, accurate and up-to-date records; following appropriate apprentice selection procedures and adhering to an affirmative action plan (where and when appropriate); complying with completion requirements; and utilizing qualified instructors.

Meeting these requirements demands, first and foremost, that program sponsors get the technical assistance needed to guarantee that their programs are being operated in the best possible manner and, second, that regular on-site reviews be conducted by qualified and well-trained staff who can evaluate a sponsor's program, observe and interview the apprentices, suggest corrective actions when necessary, or, if warranted, set the wheels in motion to de-register a program deemed unacceptable. In the final analysis, the overriding objective is to safeguard the welfare of apprentices and assure that they receive the highest quality training and education.

Today, those responsible at the Federal and State levels for promoting and assuring quality within the U.S. apprenticeship system do not have the resources needed to perform this function effectively. Currently available funds again fall far short of what is needed to support and monitor the 43,000 registered programs and is certainly insufficient to finance the level of activity that will be needed under an expanded apprenticeship system.

Resource needs: An effective quality promotion and assurance program will require additional resources to support staff, travel, the development and printing of education and training materials to assist sponsors with their quality management procedures, and to assure the internal quality operations of BAT. With additional funds, BAT staff will be able to provide the technical assistance and guidance that is needed in this arena and conduct quality reviews to assure that sponsors are meeting their obligations as set forth in law and regulation. An estimated \$3 million is needed to support these activities.



CONCLUSION

Based on the experience covering centuries in time, apprenticeship is proven to be an extremely cost effective method of developing the high skills required of American workers today. The use of apprenticeship in the U.S. has been limited over the years due to a serious lack of public awareness of the opportunities offered and limited resources made available for promotion and administration of apprenticeship.

Accordingly, a modest investment of \$24.5 million will support the kinds of activities needed to significantly expand apprenticeship and make it a viable training strategy for thousands of people who otherwise have little opportunity for skills development.

The Federal Committee on Apprenticeship is established by charter to advise the U.S. Secretary of Labor on matters pertaining to apprenticeship and training in the U.S. The FCA is comprised of representatives of labor, employers, educators, and others.

FEDERAL FUNDING FOR APPRENTICESHIP

FACT SHEET

- In 1990, the Federal government spent \$15.5 million and individual states spent approximately \$50.0 million for apprenticeship training in the U.S. For the nearly 300,000 registered apprentices, this represented a highly cost-effective investment of slightly more than \$200.00 per apprentice.
- Investment in apprenticeship is essentially budget neutral. The major training costs for apprenticeship are paid by the private sector -- that is, employers and/or labor-management committees. The funds invested in apprenticeship by the Federal and state governments are more than recouped through the Federal, state, and local taxes paid by apprentices on their wages.
- Between 1980 and 1990, Bureau of Apprenticeship and Training (BAT) staff ceilings dropped from 426 positions to 250 positions, a decline of more than 40%.
- BAT consists of 10 regional, 50 state, and 70 area and local offices. Staff in these offices are responsible for marketing and promotion, technical assistance, compliance reviews, maintaining apprentice and program registration data, etc. On average, there are .8 FTE professional staff and .48 FTE clerical staff in the field offices. Fifteen state and 42 area offices have no clerical personnel whatsoever.
- In the current fiscal year, travel allocations for each professional staff member will equal an estimated \$1,844 per year or \$154 per month.
- According to the U.S. General Accounting Office, Federal apprenticeship and training representatives spend approximately one-fifth of their time promoting apprenticeship while state agency personnel devote approximately 10% of their time on apprenticeship promotion. This level of effort is far too limited to lead to significant expansion of apprenticeship, but further efforts are hampered by insufficient staff and travel funds.

Recommendation: Federal funding for apprenticeship should be increased by \$24.5 million to support the promotion and expansion of apprenticeship training in the U.S, to assure the quality of apprenticeship programs, and to support the operation of a comprehensive apprentice/program registration tracking system.

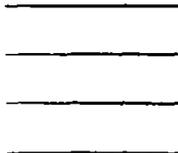
A STRATEGIC PLAN FOR EXPANDING
PROMOTING AND
APPRENTICESHIP IN THE U.S.
(PHASE II)

Recommendations of the
Federal Committee on Apprenticeship

Approved:
November 5, 1992

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BACKGROUND

America's pressing need for a national strategy that will simultaneously provide millions of Americans with pathways to employment via non-college routes and industries with the skilled work forces they require to remain competitive in world markets has sparked widespread interest in apprenticeship. As proven both in the U.S. and abroad, apprenticeship is a training strategy that enjoys virtually unparalleled success in producing top quality, skilled workers. Moreover, apprenticeship is highly cost-effective. Today, the Federal government invests approximately \$16 million in apprenticeship through the U.S. Department of Labor's Bureau of Apprenticeship and Training. These funds, when combined with state and private investment in apprenticeship, generates at least \$900 million in Federal income tax revenues alone for a Federal return on investment of more than 50:1.¹

The Federal Committee on Apprenticeship² believes that a broad-based expansion of the registered apprenticeship system in the U.S. would meet the training needs of both industries as well as youths, women, young adults, minorities, and dislocated workers, and others. Such an effort will require the cooperation and collaboration of Federal and state governments, employers, unions, and educators. The challenge is to expand the current apprenticeship system³ so that it encompasses far more industries.

In April, 1992, the Federal Committee on Apprenticeship (FCA) issued a set of recommendations that lay the foundation for meeting this challenge. These recommendations call for a modest investment of an additional \$24.5 million in the U.S. registered apprenticeship system.⁴ These funds would be used primarily for two purposes:

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- ¹ Assumes that there are 300,000 apprentices earning \$15,000 per year (a conservative earnings estimate) and that these apprentices pay \$3,000 per year in Federal income taxes.
 - ² The Federal Committee on Apprenticeship is established by charter to advise the U.S. Secretary of Labor on matters relating to apprenticeship and training in the U.S. The FCA is a bipartisan, multidisciplinary committee consisting of representatives of labor, employers, Federal and state government, educators, and others.
 - ³ According to the U.S. Department of Labor, Bureau of Apprenticeship and Training, there are approximately 300,000 registered apprentices in the U.S. today. Less than 5% of all U.S.-based companies operated registered apprenticeship programs.
 - ⁴ See *Promoting and Expanding Apprenticeship: A Strategic Plan for Preparing America's Work Force of Tomorrow (Phase I)*, Federal Committee on Apprenticeship, April 28, 1992.

- to strengthen the registered apprenticeship infrastructure across the U.S. to enable it to promote the development of apprenticeship programs in new industries and occupations and assure that all programs (existing and new) operate to their fullest potential and in accordance with the highest quality training standards; and
- to mount an aggressive campaign designed to educate employers, unions, schools, prospective apprentices, parents and others about the value and benefits of apprenticeship.

The Committee believes that these two steps, which go hand-in-hand, are fundamental to achieving a significant expansion of apprenticeship in the U.S. Research conducted by the Committee to inform its deliberations found that apprenticeship is a relatively foreign concept in the U.S. Key players such as employers, secondary and post-secondary teachers and guidance counselors, parents, women, minorities, youths, and others know little about apprenticeship and the opportunities it has to offer.⁵ Even when there is interest in and understanding of apprenticeship, the current system is simply too small to accommodate the demand for training slots.⁶

In order to encourage participation in apprenticeship by new industries, the Committee concludes that a highly-organized, well-orchestrated grass roots effort, led by the Federal government in partnership with the states, needs to take place to a) heighten awareness of and appreciation for apprenticeship among all key groups and b) provide essential technical assistance to employers to assist them in establishing new apprenticeship programs. Studies by the U.S. General Accounting Office and others⁷ strongly suggest that implementation of the recommendations contained in Phase I of the Strategic Plan would go a long way toward achieving these objectives. In the absence of such an effort, the Committee doubts that significant progress toward expanding apprenticeship can be made.

BEYOND THE BASICS

In preparing Phase I of the Strategic Plan, the Committee noted that efforts beyond education and technical assistance may be needed to fully develop apprenticeship in this country.

⁵ See "Survey of Regional and State Directors, Bureau of Apprenticeship and Training," (January, 1992) and "Survey of State Apprenticeship Directors," (April, 1992) sponsored by the Federal Committee on Apprenticeship.

⁶ IBID.

⁷ *Apprenticeship Training: Administration, Use, and Equal Opportunity*, U.S. General Accounting Office, GAO HRD-92-43, March 1992; Hansen, G.B. and Skidmore, M.H., "Closing the Rural Employment and Training Gap: An Innovative Approach to Increase Skill Training Opportunities for Rural Workers," U.S. Center for Productivity and Quality of Working Life, Utah State University, April, 1985.

Specifically, the Committee indicated that it would examine and make recommendations with respect to such issues as financial and non-financial incentives for participation, recognition, linkages with other Federal programs, and related instruction needs. The Committee has examined these issues and found considerable consensus in virtually all areas except financial incentives. The following reflects the Committee's thinking to date on these issues.

o Incentives

One of the major questions facing public policy makers today involves what, if any, incentives are needed to encourage participation in apprenticeship. Already, a number of legislative proposals have been advanced including grants,⁸ tax incentives,⁹ and assessments.¹⁰ As part of the Apprenticeship 2000 Review conducted by the U.S. Department of Labor in the late 1980s, one study examined financial and non-financial incentives for apprenticeship programs.¹¹ The study explored the rationale for government intervention in apprenticeship training and concluded that such intervention may be appropriate because the "market" has not encouraged the development of apprenticeship across a broad range of industries.¹² To address this, the study posits seven categories of financial and non-financial incentives:

1. Direct subsidies to apprentices
2. Direct subsidies to firms employing apprentices
3. Tax credits and reduced payroll taxes
4. Levy-grant systems
5. Support for training facilities and related instruction
6. Contract preference
7. Improvements in the dissemination of information about apprenticeship¹³

⁸ See, for example, S. 2745/H.R. 5220 (Dole/Goodling on behalf of the Administration) "The National Youth Apprenticeship Act of 1992;" S. 2059/H.R. 3470 (Nunn/Gephardt) "The Youth Apprenticeship Act of 1991;" H.R. 3475 (Morella) "Women in Apprenticeship Occupations and Nontraditional Occupations Act;" H.R. 3507 (Valentine) "American Industrial Quality and Training Act of 1991;" H.R. 4078 (Kildee) "Workforce Readiness Act of 1992;" and H.R. 5723 (Perkins) "School-to-Work Transition and Skill Standards Development Act of 1992."

⁹ See, for example, H.R. 2550 (Grandy) "Leading Employers into Apprentice Partnerships Act."

¹⁰ See, for example, H.R. 3470/S. 1790 (Gephardt and Regula/Kennedy and Hatfield) "High Skills Competitive Workforce Act of 1991."

¹¹ R. J. Gitter, "A Review of Financial and Non-Financial Incentives for Apprenticeship Programs," prepared for the U.S. Department of Labor, Bureau of Apprenticeship and Training by Ohio Wesleyan University, September, 1988.

¹² IBID., pages 8-14.

¹³ IBID., page 14.

The Committee agrees that this issue should be examined from the distinct perspectives of employers and prospective apprentices and in terms of both financial and non-financial incentives for both groups.¹⁴ At present, however, there appears to be far more consensus on policy directions concerning non-financial incentives than for financial incentives.

Non-Financial Incentives: Consistent with the findings of the Gitter study,¹⁵ the Committee agrees that the image and status of apprenticeship needs considerable bolstering in the U.S. Largely because of America's longstanding preoccupation with and preference for college education, apprenticeship is frequently viewed as a second choice for career preparation. Yet, as recent studies have pointed out, only 30% of jobs will require a college education in the future, but many will require postsecondary training of a different sort. For a significant number of occupations, apprenticeship is the logical alternative pathway to employment. But parents and their children, educators, employment counselors and others must be convinced of this. Thus, the goal is to improve the status and image of apprenticeship, to make career preparation through apprenticeship as desirable as college, and to instill a sense of national pride in apprenticeship equivalent to that of formal college education. Quality training programs, recognition of outstanding apprentices and apprenticeship programs, and meaningful employment are the ingredients needed to achieve this goal.

The Committee recognizes that improving the image of apprenticeship will take time. Nevertheless, the Committee believes that some steps can be taken immediately to begin to accomplish this goal. These steps are as follows:

- *Presidential Apprenticeship Awards Program:* Building upon efforts that are already under way in many states, a prestigious, highly visible national program for recognizing outstanding apprentices and apprenticeship programs should be developed. Today, many states and some industries conduct competitions that result in honoring top apprenticeship program sponsors and apprentices. The Committee recommends that a Presidential Apprenticeship Awards Program designed to recognize outstanding sponsors and apprentices on an annual basis be developed by the Federal government (through the U.S. Department of Labor) in cooperation with the states. Such a program should a) provide for coordinated competition at the state, regional and national levels and b) make awards in several categories of industries (e.g., construction, manufacturing, service, etc.) and perhaps sub-industries within the major industries. The program should culminate in an awards ceremony involving the national winners and the President of the United States. As part of the awards process, extensive publicity efforts should be undertaken at the

¹⁴ For purposes of this discussion, financial incentives are defined as direct financial assistance to employers or apprentices to offset training costs; non-financial incentives do not deal with direct training costs and may or may not involve the expenditure of funds.

¹⁵ R. J. Gitter, *op. cit.*, page 31.

state, regional and Federal levels to create broad-based public awareness of and appreciation for apprenticeship.

- *Instilling Pride in Apprenticeship:* Efforts also should be made to create a strong sense of pride in and status of apprenticeship for apprentices and their families from the moment that apprentices enter an apprenticeship program. Today, registered apprentices who successfully complete their training programs receive a Certificate-of-Completion issued by Federal and state governments. The Committee believes that recognition must begin earlier to enhance the image of apprenticeship training as a career pathway. As a first step, the Committee recommends that a nationally recognized badge/pin with an appropriate emblem or logo be developed and given to each apprentice upon acceptance into a registered apprenticeship program and an appropriate badge/pin be given to each apprentice upon successful completion of training. In addition, learning from the lessons of America's colleges and universities, appropriate symbols for families of apprentices to display (e.g., automobile stickers, etc.) should be developed. Finally, in addition to the registration certificate provided by the Bureau of Apprenticeship and Training, an appropriate decal or other emblem recognizing participation in apprenticeship training should be developed and given to each program sponsor.
- *Training Repayment:* The Committee was advised that one particularly significant barrier to employer participation in apprenticeship involves their concerns regarding "pirating" - the situation that occurs when an apprentice is recruited by other employers once he or she has completed the training program. The Committee believes that this problem deters some potential sponsors from establishing apprenticeship programs. Gitter suggests that one solution to this "free rider" problem involves the establishment of a levy-grant system. Under such a system, a payroll or corporate income tax is levied on all companies in a particular industry or those firms that employ workers in specified apprenticeable occupations. The proceeds of the tax are then returned in the form of grants to those firms that employ and train apprentices.¹⁶ During the Committee's deliberations on this issue, however, many people suggested a more direct response -- that is, providing "scholarship/loan repayment" programs, such as those operated by many sponsors in the construction industry. Under these programs, apprentices who leave their employers prior to a pre-defined employment term are contractually obligated to pay all or a portion of their training costs. Given the complexities and unknown effects of the levy-grant system model, the Committee recommends that the feasibility of encouraging program sponsors to offer "scholarship/loan repayment programs" be explored and, if determined feasible, model contract language be developed. Such programs would obligate apprentices to work for a reasonable period of time for the program sponsor, at the sponsor's option, or repay the sponsor for the cost of the training program.

¹⁶ Gitter, op. cit., page 25.

Financial Incentives: The issue of financial incentives for participation in apprenticeship is far more complicated, reflecting the considerable uncertainty that surrounds the broader question of how to expand employer investment in training. Indeed, the Gitter study offered a number of policy options, but acknowledged that there is little data or evidence to indicate their effectiveness.¹⁷ By and large, the only evidence to support interventions such as wage subsidies, tax credits and payroll deductions is the experience of foreign countries. However, these experiences may not be transferrable to the United States. Based on its own discussions and research, the Committee concludes that, while there are many opinions, there is no consensus on what, if any, financial incentives are needed in this area. Nevertheless, the Committee recognizes that this issue will be the focus of major public policy debates in the coming months and wishes to offer the following preliminary analysis and recommendations with respect to apprenticeship.

Apprenticeship training costs fall into three distinct categories, each of which requires separate treatment. These categories consist of on-the-job training, related instruction, and ancillary services (testing and assessment).

On-the-Job Training Costs: Although not explicitly stated, most of the current proposals (e.g., tax credits, assessments, grants) apply to the on-the-job training cost component. As discussed earlier, appropriate public policy direction for this cost category appears to be most uncertain. This is due to the fact that the reasons for employer involvement in training and the ability of

¹⁷ For example, with respect to wage subsidies, Gitter notes, "In 1977-78 there was a 50 percent wage subsidy to employers who hired apprentices under the Apprenticeship-School Linkage Initiative program. The effectiveness of the subsidy was mixed. Anecdotal evidence suggested that small and medium-sized firms at two sites hired more apprentices. At a third site with mostly large employers, the subsidy had little effect." (page 20)...In a study that examined the effect of apprentice wage rates on the number of apprentices employed for each of ten construction occupations, the results indicated that "after controlling for other factors such as regional location, journeyworkers' wage rate, unions, status of the firm, and the number of journeyworkers employed, there was not a statistically significant relationship between the wage rates of apprentices and the number employed. This relationship would argue against the effectiveness of using wage subsidies to increase the number of apprentices." (pages 20-21)... "Despite the heavy use of apprentice employment subsidies by other (emphasis added) nations, doubts do remain about its effectiveness in the United States. Although evidence indicates that wage subsidies to employers alone offer little promise, they might be part of an effective package to increase employment." (page 21)

With respect to tax credits and reduced payroll taxes, the situation is much the same. Because there has been no specific federal tax credit or payroll deductions for employing apprentices, their potential impact is unknown. Gitter argues that they may induce participation in apprenticeship, but only in combination with other efforts such as adequate publicity, minimal red tape, and good support services (pages 23-25).

any individual employer to offer training seem to vary considerably. For example, an industry that is facing severe labor shortages may be more motivated to establish training programs than an industry that is not. Some businesses are more likely to develop training programs out of a sense of community responsibility or interest in school reform than others. And the ability of employers to sponsor training programs appears to be strongly related to size and financial well-being. The diversity of issues makes across-the-board solutions difficult to agree upon. As a general rule, the Committee believes that apprenticeship programs should be developed and paid for by the industry in question, consistent with current practices. Such an investment leads to strong, ongoing employer commitment. However, the Committee recognizes that some sort of public financial investment may be needed to foster greater employer involvement in apprenticeship or other forms of training, but believes that the specific form of such support needs further analysis.¹⁸ Whatever this form takes, it should be designed to be stable and ongoing since experience has shown that programs started with funding assistance tend to disappear when the funding ends. Given the unknowns, the Committee refrains at this time from making a definitive policy recommendation concerning on-the-job training financial incentives. For apprenticeship, the Committee recommends that other steps -- such as those outlined in Phase I of the FCA's Strategic Plan and others contained in this report -- be undertaken first and that the issue of employer incentives (tax credits, payroll deductions, wage subsidies, etc.) be revisited within 12 to 24 months following further research and assessment of their likely impact. As part of this longer term review, the Committee also recommends that the desirability of reducing Worker's Compensation premiums for program sponsors that provide safety training courses in accordance with pre-defined standards be explored.

Related Instruction: The second major cost category deals with related instruction. According to reports from training sponsors and Federal and state apprenticeship officials throughout the country, sources of related instruction courses and availability of related instruction materials pose a significant problem. Of particular concern is the recent loss of funds under the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990, a perhaps unintended byproduct of the major shift in program focus that was brought about by the latest set of amendments. Funds previously available to the States under this Act were used, in part, to fund the costs of providing related training instruction to apprentices. Under a formula in the amended Act, the current appropriation is less than the \$1 billion required to trigger funding that could be available for related instruction, hence such funds are no longer available for that

¹⁸ The Committee acknowledges that there is considerable interest in the notion of employer tax credits for inducing participation in apprenticeship, although it is uncertain what tax credit levels are needed to encourage maximum participation. If tax credits are made available to apprenticeship programs, the return on investment for the Federal government would still be positive as long as the levels remain below the level of taxes that apprentices pay on their wages. For example, a \$2,400 employer tax credit per apprentice (the current Targeted Jobs Tax Credit program ceiling) would yield nearly \$200 million in net Federal tax revenues (assuming 300,000 apprentices earning an average salary of \$15,000 per year).

purpose. The loss of this funding represents a serious setback for many existing apprenticeship programs. Restoring these funds is essential, but only a partial solution. The Committee believes that the need for a well developed system of industry-developed related instruction must be explicitly recognized by public policy makers or the goals for expanding apprenticeship cannot be realized. The Committee also believes that such an investment is justified given the projections for the numbers of people who are not expected to require formal college preparation for employment.

Thus, the Committee recommends that the U.S. Department of Labor, in cooperation with the U.S. Department of Education and appropriate congressional committees, perform a thorough analysis of existing sources of related instruction, the related instruction needs of current apprenticeship programs, and the projected needs that will arise under an expanded apprenticeship system and allocate appropriate resources based on this needs assessment. Such instruction may be provided directly by program sponsors, community colleges, or vocational education schools that are equipped to offer the necessary instruction. Based on input that the Committee has received, it appears that assuring the availability of related instruction courses and materials could induce many new employers to offer apprenticeship programs.

Ancillary Costs: The third major category of training costs involves expenses for testing and assessment. Recruitment and selection of qualified applicants often entails considerable expense for program sponsors. Such expense may deter small and mid-sized firms or other companies from establishing apprenticeship programs. Presently, the State Employment Security Agencies (SESAs), which are Federally-funded and operated by the states, offer employment/job services to job seekers (including testing and assessment) and referrals to employers that have job openings. Assuring that these services are available to apprentice program sponsors could make participation in apprenticeship more affordable. The Committee recommends that the U.S. Department of Labor take appropriate steps to assure that the testing, assessment, and referral services offered by SESAs are made available to apprentice program sponsors. Although not directly related to the cost issue, the Committee also recommends that the U.S. Department of Labor expedite efforts to develop a valid and reliable testing and assessment instrument.

o Linkages with Other Federal Programs

President Bush's recently announced Job Training 2000 proposal points out the need to better coordinate the dozens of job training programs operated by the Federal government. The Committee believes that strengthening the linkages between the registered apprenticeship system and other job training programs would benefit both the apprenticeship system as well as the populations targeted for assistance under these various programs. The primary advantages to apprenticeship programs are a) that funds available under these various job training programs could be used to pay for testing, assessment, related instruction or other training costs and b) that the targeted populations, consisting mainly of women and minorities, could represent new recruitment sources for program sponsors; the advantage to the various program participants is that they may have the opportunity to enroll in an apprenticeship program, which enables them

to acquire skills in a particular occupation, earn wages while being trained, and have excellent prospects for future employment.

Historically, there have been numerous efforts to link apprenticeship and other Federal job training programs.¹⁹ For example, in May, 1985, a Circular was issued by the Bureau of Apprenticeship and Training to all regional offices urging them to establish Apprenticeship Steering Committees in cooperation with local and state officials. These committees have been established in some states and have proven to be an effective means for establishing linkages and promoting and expanding apprenticeship. Across the country, other examples of coordinated efforts between regional and state BAT offices and various programs can be found. These include linkages with Job Training Partnership Act (JTPA) programs, Jobs Opportunities and Basic Skills Act (JOBS) programs, Economic Dislocation and Worker Assistance Act (EDWAA) programs, Trade Adjustment Assistance (TAA) programs, and so forth. Unfortunately, there is no coordinated Federal approach or uniform policy concerning linkages among apprenticeship and other job training programs, so these efforts tend to be isolated and sporadic at the state and local levels.

The Committee recommends that the Federal government, under the auspices of the U.S. Department of Labor, establish an interagency committee for apprenticeship and other job training programs. The interagency committee should consist of representatives of the FCA, Bureau of Apprenticeship and Training, National Association of State and Territorial Apprenticeship Directors, National Association of Government Labor Officials, Job Corps, EDWAA, TAA, JOBS (HHS), JTPA, U.S. Department of Education and others to be identified by the Secretary of Labor. It would be responsible for the following:

- recommending national policies, procedures, and necessary agreements for promoting linkages between apprenticeship and other job training programs;
- determining how such policies, procedures, and agreements get translated to the state level;
- evaluating existing training-related legislation and formulating recommendations for changes to such legislation to encourage linkages with apprenticeship;
- identifying, describing, and disseminating prospective roles and responsibilities of Federal agencies involved or participating in the linkage activities;

¹⁹ For a complete discussion, see "Strengthening Linkages Between Apprenticeship and Other Federal Job Training Programs (A Background Paper)," prepared for the Federal Committee on Apprenticeship by Minor R. Miller, Executive Director, Federal Committee on Apprenticeship, October, 1992.

- monitoring and evaluating the effectiveness of linkage efforts; and
- exploring the feasibility and implications of requiring all Federal contractors that receive training funds as part of their contracts to offer apprenticeship programs.

SUMMARY AND RECOMMENDATIONS

The U.S. registered apprenticeship system has the potential to meet America's critical need for a national training strategy that simultaneously provides training opportunities to millions of Americans -- including youths, minorities, women, and others -- and skilled workers for U.S. industries. To accomplish this goal, a broad-based expansion of registered apprenticeship needs to take place. The Federal Committee on Apprenticeship offers the following recommendations in this regard:

- 1) Implement the recommendations contained in *Promoting and Expanding Apprenticeship: A Strategic Plan for Preparing America's Work Force of Tomorrow (Phase I)*, approved by the Federal Committee on Apprenticeship on April 28, 1992. These recommendations call for a modest investment of an additional \$24.5 million to a) strengthen the registered apprenticeship infrastructure across the U.S. so that it can promote the development of apprenticeship programs in new industries and occupations and assure that all programs (existing and new) operate to their fullest potential and in accordance with the highest quality training standards; and b) mount an aggressive campaign designed to educate employers, unions, schools, prospective apprentices, parents and others about the value and benefits of apprenticeship.
- 2) Establish a Presidential Apprenticeship Awards Program to recognize outstanding apprentices and apprenticeship programs. Such a program should a) provide for coordinated competition at the state, regional and national levels and b) make awards in several categories of industries (e.g., construction, manufacturing, service, etc.) and perhaps sub-industries within the major industries. The program should culminate in an awards ceremony involving the national winners and the President of the United States. As part of the awards process, extensive publicity efforts should be undertaken at the state, regional and Federal levels to create broad-based public awareness of and appreciation for apprenticeship.
- 3) Undertake efforts to improve the sense of pride in and status of apprenticeship. As a first step, a nationally recognized badge/pin with an appropriate emblem or logo should be developed and given to each apprentice upon acceptance into a registered apprenticeship program and an appropriate badge/pin be given to each apprentice upon successful completion of training. In addition, appropriate symbols for families of apprentices to display (e.g., automobile stickers, etc.) should be developed. Finally, in addition to the registration certificate provided by the Bureau of Apprenticeship and Training, an appropriate decal or other emblem recognizing participation in apprenticeship training should be developed and given to each program sponsor.
- 4) Explore the feasibility of encouraging program sponsors to offer scholarship/loan

repayment programs and, if determined feasible, develop model contract language for these programs. Such programs obligate apprentices to work for a reasonable period of time for the program sponsor, at the sponsor's option, or repay the sponsor for the cost of the training program.

- 5) With respect to financial incentives for employer participation in apprenticeship (e.g., tax credits, wage subsidies, payroll deductions, assessments, etc.), assess this issue further to determine the desirability and likely impact of such incentives and to take into consideration the potentially unique needs of different industries and varying size companies. As part of this review, explore the desirability of reducing Worker's Compensation premiums for program sponsors that provide safety training in accordance with pre-defined standards. In the interim, implement the recommendations contained herein and assess their impact during the next 12-24 months.
- 6) Conduct a needs assessment of related instruction courses and materials taking into consideration the needs of existing programs and new programs to be developed under an expanded system and develop strategies to assure that sufficient industry-developed related instruction materials and courses are available to apprenticeship program sponsors. It is believed that this would make participation in apprenticeship considerably more feasible for many existing and new sponsors.
- 7) Take appropriate steps to assure that the testing, assessment and referral services offered by State Employment Security Agencies are made available to apprenticeship programs sponsors. This would benefit many sponsors, including, in particular, small and mid-sized firms that may have limited resources for this purpose. Additionally, expedite efforts to develop a valid and reliable testing and assessment instrument.
- 8) Establish a Federal interagency committee, under the auspices of the U.S. Department of Labor, to formalize linkages between apprenticeship and other job training programs. This committee would have responsibility for developing national policies and procedures for promoting linkages between apprenticeship and other job training programs. The interagency committee should consist of representatives of the FCA, Bureau of Apprenticeship and Training, National Association of State and Territorial Apprenticeship Directors, National Association of Government Labor Officials, Job Corps, EDWAA, TAA, JOBS (HHS), JTPA, U.S. Department of Education and others to be identified by the Secretary of Labor. It would be responsible for the following:
 - recommending national policies, procedures, and necessary agreements for promoting linkages between apprenticeship and other job training programs;
 - determining how such policies, procedures, and agreements get translated to the state level;

- evaluating existing training-related legislation and formulating recommendations for changes to such legislation to encourage linkages with apprenticeship;
- identifying, describing, and disseminating prospective roles and responsibilities of Federal agencies involved or participating in the linkage activities;
- monitoring and evaluating the effectiveness of linkage efforts; and
- exploring the feasibility and implications of requiring all Federal contractors that receive training funds as part of their contracts to offer apprenticeship programs.

Appendix C:

**Alabama's Student Apprenticeship Linkage
Program in Vocational Education**

**POC: Mr. Dwight Williams, Industry–Education Coordinator,
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**ALABAMA'S
STUDENT APPRENTICESHIP
LINKAGE PROGRAM
IN
VOCATIONAL EDUCATION**

"PROMOTING QUALITY IN EDUCATION"

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(205)552-3700 or (205)772-8843**

STUDENT APPRENTICESHIP LINKAGE PROGRAM IN VOCATIONAL EDUCATION

INTRODUCTION:

The Student (Youth) Apprenticeship Program is expanding the effort in the State of Alabama to develop a young quality work force. The program is designed to bridge skill training programs in secondary schools with apprenticeship training in industry. Selected students who are high school seniors and who have completed a specified amount of academic instruction and vocational education begin earning apprenticeship credit through an industry-education cooperative program that leads to full time employment. The Youth Apprenticeship Program is a major initiative to return quality and prestige to Alabama's Vocational Education System and to meet the work force needs of business and industry.

NEED FOR PROJECT:

Alabama's industrial complex is being jeopardized because of a growing skilled labor shortage. The average journeyman in most high skill crafts and occupations is nearing retirement age. Also, the number of young people entering the workforce is declining. Therefore, the number of skilled workers being prepared to replace the retirees and to fill the new jobs being created by industry is inadequate.

Most students find it extremely difficult to enter high skilled occupations. Students need a career preparation path to high skilled occupations that is easy to identify and to enter. They need an opportunity to learn what it is like to work in a real work setting under real working conditions.

Traditionally, a very small percentage of women and minorities find their way into the high skilled crafts and precision occupations. Individuals in these two groups need special assistance in entering the highly skilled occupations.

Also, many small businesses do not participate in apprenticeship training programs either because of the high cost of training personnel or because they do not know how to establish a quality training program. However, if the small business is going to remain competitive in a world market, they must maintain a highly skilled work force.

PURPOSE:

The purpose of the Student Apprenticeship Linkage Program in Vocational Education is to facilitate the transition of students from high school into high technology occupations through the cooperative efforts of industry, labor, and education.

OBJECTIVES:

1. Establish a systematic transition for youth apprentice students from school to work by linking the academic curriculum with a curriculum for work-site experience and learning.
2. Enhance the youth apprentice's prospect for full time employment after graduating from high school by placing students in positions that provide for significant opportunities for continued education and career development.
3. Demonstrate a model to increase the efficiency of preparing a skilled work force by providing early entry of students into apprenticeship programs.
4. Provide a source of skilled workers for occupations which will have high demand and low supply in the work force of the year 2000.
5. Provide a mechanism for the significant involvement of community agencies and industry in the public education delivery system.
6. Enable employers, especially small businesses and industries, to participate in the development of apprentices without prohibitive training costs.
7. Provide a means for students to receive training on state-of-the art equipment without requiring excessive capital outlay by schools.
8. Facilitate the entry of minorities, women, and other target groups into apprenticeship programs.
9. Provide employers an opportunity to assess student skills and potentials prior to major commitments of full apprenticeship salaries and permanent employment.

DESCRIPTION OF PROJECT:

Inservice meetings are conducted in local school systems with all vocational personnel, including guidance counselors, to explain the student apprenticeship linkage program. Vocational personnel are urged to contact the industries in their areas of training to determine the need for the program. Individual companies are then contacted about the program by the apprenticeship coordinator. If the company is interested in the program, the Bureau of Apprenticeship and Training is notified so that the training program can be properly certified. Once the program is certified, the student is registered with the Bureau of Apprenticeship and Training as a student apprentice and begins receiving credit toward his/her certification in the skill area while completing the requirements for graduation from high school. The local educational agency in cooperation with local businesses and industries operate the Student Apprenticeship Linkage Program in accordance with the standards of the Bureau of Apprenticeship and Training.

In order for a student to be selected to participate in the Youth Apprenticeship Program, certain qualifications must be met. The student must exhibit a knowledge of math, science, and communication skills, and must demonstrate this mastery on the Alabama Basic Competency Exam. The student should have passed Algebra 1 or its equivalent by the end of his/her eleventh grade year. In addition to the academic skills, the student must have completed at least one year of vocational training in the apprenticeable area prior to his/her twelfth grade year. Also, the student must possess personal skills such as a positive attitude, ability to work with other people, ability to follow directions, dependability, and good character.

Selected students in the vocational programs who meet the qualifications for the Youth Apprenticeship Program will be encouraged to participate. Recommended students will be screened for approval by the employer and by the apprenticeship committee.

During the students twelfth grade year, the Youth Apprentices works part-time in a cooperative education type of schedule. The student attends school for part of the day, usually in the morning, and works in the afternoon as a student apprentice. The students work a maximum of 20 hours per week. The youth apprentice shall receive high school credit for the work-site training. The credit is recorded as vocational cooperative education credit. State standards for cooperative education programs which provide for student safety and quality instruction are followed. The school and the employer cooperatively assesses student progress and determine grades. The student is registered with the Bureau of Apprenticeship and Training as a student (youth) apprentice and begins receiving credit toward his/her certification in the skill area while completing the requirements for graduation from high school.

The local Youth Apprenticeship Coordinator visits each student on the job at least twice each reporting period and consults with the student's job supervisor (mentor). Representatives of each project employer is involved in developing a training plan for each student, quarterly reviewing and revising the training plan, determining appropriate content for the student's related instruction, selecting instructors for the related instruction, selecting instructors for the related instruction, and assessing the Youth Apprenticeship Project.

Each youth apprentice attends an equivalent of four hours per week of related instruction. The content of the related instruction is indicated in the youth apprenticeship training agreement. The delivery of the related instruction must be approved by the school coordinator in accordance with the apprenticeship standards and the student's employer. Related instruction is provided during school hours and school credit is granted.

The program provides each participating employer with a stipend for one-half of the students wages up to \$2.50 per hour for a maximum of 20 hours per week for a period of 18 weeks. The reimbursement is provided to help offset some of the cost incurred by the employer in establishing a quality training program. The reimbursement is also an encouragement for small businesses to participate in the program. After the 18 weeks, the employer will be expected to pay all of the wages for the student.

The youth apprentice status ends when the student completes high school and is eligible for employment as a full-time apprentice.

The Youth Apprenticeship Program will:

1. require a year or more of skilled training in high school prior to the twelfth grade;
2. require mastery of skills in math, science, and communication on the Alabama Basic Competency Exam; (Students entering the program must have completed Algebra I by the end of their 11th grade year.)
3. provide a year of student-apprenticeship training while a high school senior;
4. provide for advanced entry into a full-time apprenticeship training program; and
5. provide an additional career option upon graduating from high school. Until this time a student's options are either attend college or enter the work force. Quality students who become involved in an apprenticeship training program can receive certification in a skill area by the age of 21 or 22 from the U.S. Department of Labor.

The Youth Apprenticeship program will provide employers:

1. a source of trained workers for their apprenticeship programs,
2. a younger work force,
3. an opportunity to assess a student's skills and potential prior to major commitments of a full-time apprenticeship program, and
4. a means of offsetting some of the cost of apprenticeship training as one-half of the student's wages will be reimbursed up to \$2.50 per hour for a maximum of 20 hours per week for 18 weeks while the student is a high school senior.

This program will aid the State of Alabama in that:

1. a young high quality work force will be trained according to industry standards,
2. as a result of this program, the State of Alabama, the Department of Education, and the Department of Labor are making a commitment to work with industry,
3. the program will help in recruiting new businesses to the State because a young high quality labor force will be available.

RESULTS:

- 146 students (40 in the first group [1989] and 106 in the second group [1990]) participated in 30 different apprenticeable trades with 83 companies. In the 1990-1991 school year 194 students were enrolled in the program with 124 business in 46 different apprenticeable areas. For the 1991-1992 school year, 206 students were enrolled in the program with 143 companies in 46 different occupational areas.
- The greatest success of the program is with small businesses. Since January, 1989, over 200 industries have been registered by the Bureau of Apprenticeship and Training for apprenticeship training as a direct result of the Student Apprenticeship Linkage Program. These companies did not have any type of a formalized training program until the Student Apprenticeship Linkage Program was implemented. By providing this assistance, it is helping the small business remain competitive in the world market.

- A workable model for coordination between schooling and employment to minimize training time and optimize preparation for high technology occupations has been demonstrated.
- For the purpose of the project, students completing high school and entering a full time apprenticeship training program are considered as successful placement in the program. Since 1989, over seventy eight percent of the students participating in the Student Apprenticeship Linkage Program have entered full time apprenticeship programs upon graduating from high school.
- The areas of highest demand in apprenticeship training are electricity/electronics, machinist, welding, computer peripheral, automotive technician, nursing assistant, maintenance technician, dental assistant, drafting design, and auto body technician. Training is conducted in industries on equipment that is considered state-of-the-art equipment which is not available in many of the school system such as CNC machines and electronic testing machines.
- For the first 18 months of the program, fifteen percent of the students participating in the apprenticeship linkage program were females. Also, ten percent of the students participating in the program were minority students. Of the 194 students enrolled in 1990-1991 school year, 40.7 percent were females. During the 1991-1992 school year, 36.1 percent of the students were females and over 15 percent were minority students.

CONCLUSION:

The Student Apprenticeship Linkage Program is a very successful way to bridge the gap between secondary school programs and the need for highly skilled workers in the workforce of industry. This program can be duplicated in other states.

STUDENT APPRENTICESHIP LINKAGE PROGRAM
1991-1992
AREAS OF TRAINING

COMPUTER PERIPHERAL
ELECTRICIANS
NURSING ASSISTANT
AUTO BODY TECHNICIAN
MAINTENANCE TECHNICIAN
DENTAL ASSISTANT
MACHINIST
MARKETING
MANAGEMENT PROGRAM
WELDER
AUTOMOTIVE TECHNICIAN
ELECTRONICS
DRAFTING DESIGN
GRAPHIC ARTS
SALES AND MARKETING
TELEVISION AND RADIO REPAIR
REFRIGERATION
MEDICAL SECRETARY
VETERINARIAN ASSISTANT
RADIOLOGY TECHNICIAN
SHEET METAL
DIESEL MECHANICS
COSMETOLOGY

WELDING AND PIPE FITTING
RETAIL SALES MANAGEMENT
FLORAL DESIGN
MEAT CUTTING
TYPEWRITER REPAIR
ARCHITECTURAL DRAFTING
MEDICAL SURGICAL AREA
INTERMEDIATE INTENSIVE CARE
MOTOR WINDING AND REPAIR
SMALL ENGINES
PHOTOGRAPHY
COOK (FOOD SERVICES)
OFFSET PRINTING & LITHOGRAPHY
PLASTIC FABRICATOR
CABINETMAKING
PLUMBING
OPHTHALMIC MEDICAL ASSISTANCE
OCCUPATIONAL CHILD CARE
LEGAL SECRETARY
HORTICULTURE
DIETARY
GLASS INSTALLER - AUTO

Appendix D:

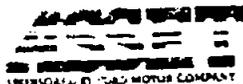
**Ford Motor Company and Northern Virginia
Community College Automotive Student
Service Educational Training (ASSET) Dealer
Information Packet 1991 – 1993**

**POC: Mr. Don Dew, ASSET Program Coordinator, Northern
Virginia Community College, Alexandria, VA. (703) 845-6190**

FORD MOTOR COMPANY

and

NORTHERN VIRGINIA COMMUNITY COLLEGE



Automotive Student Service Educational Training

Dealer Information Packet

1991-1993

3001 North Beauregard Street, Alexandria, Virginia 22311

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FORD MOTOR COMPANY
NORTHERN VIRGINIA COMMUNITY COLLEGE

Automotive Student Service Educational Training

WORKING CALENDAR

March - July	Start Advertising/Recruiting. Student Applications Accepted.
April	Notification of Testing Dates. Student Orientation/Testing. Interviews/Placement.
July	Selection or Non-Selection. Notification by College of Applicants Status and Options.
August	Ford ASSET Advisory Committee Meeting.
August	ASSET Student Registration
October	Student Support Dinner.

FALL SEMESTER 1991

First 8-Week Session

August 26, 1991	Classes Begin
September 2, 1991	Labor Day Holiday
October 22, 1991	Classes and Examinations End
October 23, 1991	Dealer CO-OP Experience Begins
November 28-29, 1991	Thanksgiving Holidays

SPRING SEMESTER 1992

First 8-Week Session

January 13, 1992	Classes Begin
January 20, 1992	King Birthday Holiday
March 7, 1992	Classes and Examinations End
March 9-15, 1992	<u>Spring Break!</u>
March 16, 1992	Dealer CO-OP Experience Begins

SUMMER SESSION 1992

First Summer Session

May 18, 1992	Classes Begin
May 25, 1992	Memorial Day Holiday
July 3, 1992	Independence Day Holiday
July 15, 1992	Classes and Examinations End
July 16, 1992	Dealer CO-OP Experience Begins

FALL SEMESTER 1992

First 8-Week Session

August 25, 1992	Classes Begin
September 1, 1992	Labor Day Holiday
October 23, 1992	Classes and Examinations End
October 22, 1992	Dealer CO-OP Experience Begins
November 27-28, 1992	Thanksgiving Holidays

SPRING SEMESTER 1993

First 8-Week Session

January 12, 1993	Classes Begin
January 19, 1993	King Birthday Holiday
January 23, 1992	Apply for Graduation - Last Day
March 6, 1993	Classes and Examinations End
March 8-14, 1993	<u>Spring Break!</u>
March 15, 1993	Dealer CO-OP Experience Begins
May 14, 1993	Commencement Ceremony

* Some dates are approximate and will be set yearly based on Northern Virginia Community College's calendar.

NORTHERN VIRGINIA COMMUNITY COLLEGE

KEY COLLEGE REPRESENTATIVES for FORD/NVCC ASSET

Dr. Richard J. Ernst,
President, Northern Virginia Community College

Dr. Jean C. Netherton,
Provost - Alexandria Campus

Dr. John H. Popeck,
Dean of Student Development - Alexandria Campus

Dr. Craig S. Washington,
Division Chair - Science and Applied Technologies,
Alexandria Campus
703-345-6263

Ms. Cammy White,
Automotive Counselor, Alexandria Campus
703-845-6268

Mr. Russell Taylor,
Program Head, ASSET Coordinator, Automotive Technology
Instructor, Alexandria Campus
703-845-6230 or 703-845-6290
FAX# 703-845-6205

ASSET

AUTOMOTIVE STUDENT SERVICE EDUCATIONAL TRAINING

What is ASSET?

ASSET is a 2-year college program leading to an Associate in Applied Science Degree in Automotive Technology. It is a joint effort of three organizations: Ford Motor Company, Ford and Lincoln-Mercury dealers and Northern Virginia Community College.

What is the purpose of ASSET?

To upgrade the technical competency and professional level of the incoming Ford and Lincoln-Mercury dealership service technicians:

To train Ford ASSET Program students to analytically diagnose, service and maintain Ford automotive products using recommended procedures, special tools, and Ford service publications:

And provide course content that will enable the successful graduate to advance in position after additional experience and to understand new systems and components as they are introduced.

How does it work?

The ASSET curriculum utilizes 8 week periods of classroom work alternating with 12 week periods of full-time work experience at a Ford and/or Lincoln-Mercury dealership.

What is the purpose of the cooperative education work experience periods at the dealership?

This system allows the student to apply, in a real world setting, what he or she has learned during the previous classroom session. In addition, the student becomes familiar with the dealership environment, its organizational structure, and the competencies that are expected of a professional automotive technician.

What subjects are studied?

Technical training on Ford vehicles and components includes the latest developments in engine repair, automotive electrical and electronic engine control systems, brakes, front end, automatic and manual transmissions, fuel systems and emission control systems. In addition to the technical curriculum, courses will be offered in areas such as Technical Mathematics, English, Speech, and Psychology to provide students with the background necessary for effective communication of ideas and to enhance future opportunities for career advancement.

SECTION I - PARTICIPANTS

FORD ASSET ADVISORY COMMITTEE

Northern Virginia Community College, Ford Motor Company, and Ford and Lincoln-Mercury dealers joined forces in the Fall of 1988 to develop an Associate in Applied Science degree Automotive Program. This Program, entitled "Automotive Student Service Educational Training...ASSET," was designed to upgrade the technical competence and the professional status of incoming Automotive Dealership Service Technicians.

In order to ensure the continued success of the ASSET Program and its responsiveness to the needs of the College and Ford, the Ford ASSET Advisory Committee is being established with the following purpose.

PURPOSE

To work together in frequent review of the ASSET Program to ensure its continued response to industry, College and student needs.

The Committee:

- * Keeps the College informed of changes in industry service requirements;
- * Recommends program and course adjustments;
- * Recommends tool and equipment purchases;
- * Assists in program promotion, student recruitment screening and selection of students, and dealer sponsorship;
- * Aids in resolution of conflicts which may arise from time to time;

GOALS.

- * To provide a cordial communication link between industry and the ASSET career program;
- * To conduct periodic career program review and recommend changes or adjustments as needed;
- * To provide feedback from industry to the career program staff on effectiveness of instruction;
- * To encourage and support the development of up-to-date instruction;
- * To meet regularly to monitor and evaluate program progress and to recommend updating when necessary.

ORGANIZATION

The Ford ASSET Advisory Committee will be made up of representatives from Ford and Lincoln-Mercury Dealerships within the area served by Northern Virginia Community College. The Committee shall consist of not more than 15 and not less than 5 members. Members shall serve without financial compensation. The suggested membership is three Dealer Principals, three Service Managers, School Personnel, and Ford Motor Company personnel.

OFFICERS

The Committee officers shall consist of a:

- * Chair
- * Vice Chair
- * Secretary
- * Treasurer (if needed)

The Chair, Vice Chair, and Treasurer are elected from the Committee membership and serve terms of one year.

The Secretary is appointed by the Advisory Committee Chair.

DUTIES OF OFFICERS

The Chair shall:

- * Preside at all meetings;
- * Plan with the Secretary the meeting agenda;
- * Call the meetings.

The Vice Chair shall:

- * Preside in the absence of the Chair;
- * Fulfill other duties designated by the Chair.

The Secretary shall:

- * Prepare and mail all announcements, minutes, and other information to Council members;
- * Aid the Chair in establishing the agenda and details for the Council meetings;
- * Keep an up-to-date list of members;
- * Prepare materials for meetings;
- * Distribute information, minutes and actions to appropriate persons.

MEETINGS

Meetings shall be by written invitation only and not later than two (2) weeks before an approved meeting. The Ford ASSET Advisory Committee shall meet once each academic semester during the Fall and the Spring, and on call if additional meetings are needed.

RESPONSIBILITIES FOR PARTICIPANTS

PROGRAM HEAD

- * Act as a liaison between Ford Motor Company and NVCC;
- * Assist dealers with student selection, recruiting, and high school visit coordination;
- * Furnish program information on request;
- * Schedule Ford Training Center classes and field trip experiences for current Ford ASSET students;
- * Assist in academic advisement and student orientation;
- * Keep sponsoring dealers and Ford informed regarding student's academic progress, with student's permission;
- * Work with the ASSET instructor to identify competencies to be gained during field experience at the dealership;
- * Student recruitment, referral, and placement;
- * Assist ASSET participants in the solution of problems as they arise;
- * Maintain Ford ASSET Advisory Committee membership and Ford Service Training Standards.

COLLEGE COUNSELOR

- * Provide academic advisement;
- * Evaluate previous college credit;
- * Furnish program information on request;
- * Coordinate with the Program Head to assist in student summer recruitment and placement testing;
- * Participate in student orientation;
- * Maintain Ford ASSET Advisory Committee membership.

ASSET INSTRUCTOR

- * Provide on campus student instruction as scheduled and in accordance with required curriculum;
- * Coordinate with the Program Head to ensure student assignments that reflect current Ford technology;
- * Provide the students with in-dealership visits and class related CO-OP tasks, graded by the ASSET Instructor;
- * Maintain and file contacts with students, in-dealer representatives, dealer principal, and Ford representatives. Contact methods include in person visits, mail correspondence, telephone contact, meetings, etc.;
- * Assist with student recruitment;
- * Coordinate, monitor, and grade student information packets and dealer project assignments;
- * Maintain Ford ASSET Advisory Committee membership and Ford required Service Training Standards.

ASSET STUDENT

- * Maintain sponsorship with a Ford or Lincoln-Mercury dealership;
- * Provide the sponsoring dealership with responsible and productive employment;
- * Maintain academic and attendance standards;
- * Participate in all learning activities at the scheduled time;
- * Be responsible for program costs: tuition, fees, books, tools, housing, transportation, etc.;
- * Maintain a valid driver's license;
- * Wear appropriate clothing during campus and dealership training.

NORTHERN VIRGINIA COMMUNITY COLLEGE

- * Provide a dedicated classroom and shop;
- * Provide a dedicated instructor;
- * Provide Ford minimum required equipment;
- * Promote, advertise, recruit, and screen qualified student applicants;
- * Maintain official student records;
- * Provide established student services such as academic advisement, financial aid, counseling, etc.;
- * Provide appropriate degrees to qualified candidates.

FORD DEALERSHIP

Required

- * Participation in Ford ASSET Advisory Committee activities or delegate a dealer management alternative;
- * Interview, select, and employ ASSET students as needed to maintain a well-trained work force within the dealership;
- * Appoint an in-dealership ASSET coordinator to supervise the student and assist the ASSET instructor during the in-dealership work experience;
- * Agree to provide "dealership CO-OP experience" which parallels instructional activities as scheduled for the duration of the curriculum;
- * Evaluate dealer ASSET student progress and provide performance information to the Program Head and instructor;
- * Pay trainee during periods of dealer field experience, with merit increases and incentives as dealerships see fit;
- * Provide the new student(s) employee with work uniforms in a manner consistent with those provided to other dealership employees;

Recommended

- * Provide other fringe benefits in a manner consistent with those provided to other dealership employees;
- * Provide initial and continuing employment to the student upon completion of the ASSET program.

FORD MOTOR COMPANY

- * Provide Ford training for the involved college instructors;
- * Furnish College with Ford training vehicles and components;
- * Provide College with essential training materials, including Ford Training Center training software and textbooks;
- * Oversee and participate in student recruitment, selection, and placement;
- * Monitor all phases of the ASSET program.

SECTION II - COST

DEALER BENEFITS AND STUDENT COST

Northern Virginia Community College, Ford Motor Company, Ford and Lincoln-Mercury Dealers, and the nationally recognized ASSET programs are committed to the future. ASSET graduates provide high quality in-dealership Ford Motor Company technicians. The ability to repair the technologically sophisticated vehicles of tomorrow depends on the training of today's students.

1. An ASSET graduate's training and certifications limit dealer downtime for training. This saves the dealer lost productivity and the expense of sending the technician to additional training.
2. Complete "around the car" training provides more a versatile employee.
3. Ford specific training ensures that the employee knows proper Ford repair technologies and resources.
4. ASSET training provides instruction in the use and benefits of current Ford publications, such as Oasis and IVLS.
5. ASSET graduates obtain a college degree that prepares them for other employment opportunities within your dealership.

ESTIMATED STUDENT COSTS:

<u>Sem.</u>	<u>1st Sem.</u>	<u>2nd Sem.</u>	<u>Summer</u>	<u>3rd Sem.</u>	<u>4th</u>
HAND TOOLS	500	500		500	500
TEXT BOOKS	150	130	40	110	150
TUITION	630	665	245	630	665
	=====	=====	=====	=====	=====
Sub Total	\$1280	1295	285	1240	1315

TWO YEAR TOTAL: \$5,415

NOTE: All cost are approximate!

ESTIMATED DEALER COST BENEFITS:

Dealer Labor Rate	\$40.00
18.5 Hours Generated Per Week by the Student	<u>x18.5</u>
Total Dealer Income	\$743.33

ESTIMATED DEALER COST:

Student Wage Per Hour	\$6.50
Weekly Hours Paid	<u>x40</u>
Total Wage Per Hour	\$260.00
Uniforms/Cleaning	\$6.89
Insurance (FICA, Unemployment, etc.)	\$44.78
Additional Wages to the Master Technician (14.60 per hour x 18.5 hours per week)	<u>\$270.00</u>
Total Cost Per Week	\$581.77

TOTAL DEALER NET INCOME AFTER STUDENT WAGE	\$161.56
---------------------------------------------------	-----------------

FINANCIAL AID SERVICES

NVCC strives to ensure that no one be denied the opportunity of attending the College for financial reasons. The financial aid program provides a variety of ways for students to get funds for college.

Financial aid counselors at each campus provide information about financial aid programs, application procedures and eligibility.

Applications for financial aid are available from the Financial Aid Office on campus. Application must be made on the home campus and should be made well in advance of the semester for which assistance is needed. Applicants for all aid programs, including loans, must file a Financial Aid Form (FAF) through the College Board. Completed applications received before the deadline will receive priority consideration.

Additional information on scholarships, grants, loans, and on-campus employment may be found in the current Financial Aid Brochure.

SECTION III - SELECTION

ASSET STUDENT SELECTION PROCEDURE

1. All candidates are referred to NVCC Alexandria Campus for the initial interview and processing. Eligible applicants will come from following sources:
 - a. College recruitment, advertising, and promotions;
 - b. Local high schools in Maryland, Virginia, and DC;
 - c. Ford and Lincoln-Mercury dealership referrals and recruitment;
 - d. Other referrals.
2. Northern Virginia Community College will give or send an information packet to each candidate. The packet will include:
 - a. Cover letter;
 - b. General information sheets and college map;
 - c. ASSET application;
3. The student will complete the ASSET application and mail or give it to the ASSET coordinator at NVCC. Student steps for selection and screening are as follows:
 - a. Testing in the following three areas:
 1. English
 2. Math
 3. Differential Aptitude Tests (Mechanical aptitude, Space Relations, and Abstract reasoning)
 - b. Orientation and interview selections
 - c. Dealer interviews and selection
 - d. Fall registration meeting
 - e. Classes begin

4. After receiving the completed applications the dealers and candidates will attend a dealer interview day.
5. The dealers will interview the candidates from their geographic area.
6. Dealers and applicants will rank their interview preferences.
7. Dealers and candidates will be notified of selection and dealer work assignment.
8. The College will send letters to the selected students regarding college registration and orientation.
9. Students not selected for the program will be sent a letter by the College informing them of the decision and referring them to counseling for possible participation in alternate automotive programs.

SECTION IV - CURRICULUM

NVCC DEGREE REQUIREMENTS

Associate in Applied Science Degree in Automotive Technology

This curriculum leads to an Associate in Applied Science Degree in Automotive Technology which is the first step in a career at a Ford and Lincoln-Mercury Dealership.

It is important that students talk with an NVCC Counselor concerning selected classes in the curriculum.

Fall Semester 1

AUT 100	Introduction to Auto Shop Practices	2 credits
AUT 111	Automotive Engines I	4 credits
AUT 111	Lab for Automotive Engines I	0 credits
AUT 241	Automotive Electricity I	4 credits
AUT 241	Lab for Automotive Electricity I	0 credits
ENG 111	English Composition	3 credits
MTH 103	Technical Math	3 credits
AUT 297	Cooperative Education - Field Experience	3 credits

Total Academic Credits		16 credits
Total CO-OP Credits		3 credits

Spring Semester 2

AUT 112	Automotive Engines II	4 credits
AUT 112	Lab for Automotive Engines II	0 credits
AUT 242	Automotive Electricity II	4 credits
AUT 242	Lab for Automotive Electricity II	0 credits
AUT 267	Automotive Suspension and Brakes	4 credits
AUT 267	Lab for Automotive Suspension and Brakes	0 credits
AUT 215	Emissions Systems Diagnosis/Repair	2 credits
AUT 215	Lab for Emissions Systems Diagnosis/Repair	0 credits
SPD 110	Introduction to Speech Communication	3 credits
AUT 297	Cooperative Education - Field Experience	2 credits

Total Academic Credits		17 credits
Total CO-OP Credits		2 credits

Summer Semester

AUT 236	Automotive Climate Control	4 credits
AUT 236	Lab for Automotive Climate Control	0 credits
AUT 297	Cooperative Education - Field Experience	4 credits

	Total Academic Credits	4 credits
	Total CO-OP Credits	4 credits

Fall Semester 3

AUT 121	Automotive Fuel Systems I	4 credits
AUT 121	Lab for Automotive Fuel Systems I	0 credits
AUT 141	Automotive Power Trains I	4 credits
AUT 141	Lab for Automotive Power Trains I	0 credits
AUT 266	Automotive Steering and Alignment	4 credits
AUT 266	Lab for Automotive Steering and Alignment	0 credits
PSY 120	Human Relations	3 credits
PED 101	Fundamentals of Physical Activity	1 credit
AUT 297	Cooperative Education - Field Experience	3 credits

	Total Academic Credits	16 credits
	Total CO-OP Credits	3 credits

Spring Semester 4

AUT 225	Automotive Emissions Inspection	1 credit
AUT 122	Automotive Fuel Systems II	4 credits
AUT 122	Lab for Automotive Fuel Systems II	0 credits
AUT 142	Automotive Power Trains II	4 credits
AUT 142	Lab for Automotive Power Trains II	0 credits
AUT 245	Automotive Electronics	4 credits
AUT 245	Lab for Automotive Electronics	0 credits
HIS 121	United States History I	3 credits
PED 135	Bowling	1 credit
AUT 297	Cooperative Education - Field Experience	2 credits

	Total Academic Credits	17 credits
	Total CO-OP Credits	2 credits

Total ASEP Academic Credits	70 credits
Total ASEP CO-OP Credits	14 credits

DESCRIPTION OF AUTOMOTIVE COURSES

AUT 100 INTRODUCTION TO AUTOMOTIVE SHOP PRACTICES

Introduction to the Ford automotive family. Introduces shop practices and shop safety, identification and use of hand tools, general power equipment and maintenance of automotive shop. Explains basic operation procedures of standard shop equipment. Presents Occupational Safety and Health Act standards pertaining to the automotive field.

Lecture 2 hours per week.

AUT 111-112 AUTOMOTIVE ENGINES I-II

Presents an analysis of power, cylinder condition, valves and bearings in the Ford automotive engine families to establish the present condition, repairs or adjustments.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 121-122 AUTOMOTIVE FUEL SYSTEMS I-II

Analyses major Ford automotive fuel systems to include carburetors and fuel injection systems. Includes detailed inspection and discussion of fuel tanks, connecting lines, instruments, filters, fuel pumps, and turbo charger. Also includes complete diagnosis, troubleshooting, overhaul and factory adjustment procedures of all major carbureted and fuel injection systems.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 141-142 AUTO POWER TRAINS I-II

Presents Ford operation, design, construction and repair of power train components, standard and automatic transmissions. Includes clutches, propeller shaft, universal joints, rear axle assemblies, torque converters as well as standard, overdrive, and automatic transmissions.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUTO 961 FIELD EXPERIENCE

Completion of a project or research report related to the student's occupational objective, including Ford sponsored field trips as required.

AUT 215 EMISSIONS SYSTEMS DIAGNOSIS AND REPAIR

Presents logical diagnostic paths to identify vehicle HC-CO failure areas. Teaches a progression of failure detection from most likely to more complex causes. Emphasizes use of infrared analyzer and Ford manufacturer's specified adjustments.

Lecture 2 hours per week.

AUT 236 AUTOMOTIVE CLIMATE CONTROL

Introduces principles of refrigeration, air conditioning controls, and adjustment and general servicing of Ford family automotive air conditioning systems.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 241-242 AUTOMOTIVE ELECTRICITY I-II

Introduces electricity and magnetism, symbols and circuitry as applied to the Ford style alternators, regulators, starters, lighting systems, instruments and gauges.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 245 AUTOMOTIVE ELECTRONICS

Introduces the field of electronics as it applies to the Ford automobile family. Emphasizes basic circuit operation, diagnosis and repair of digital indicator and warning systems.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 266 AUTO ALIGNMENT, SUSPENSION AND STEERING

Introduces use of alignment equipment in diagnosing, adjusting, and repairing front and rear suspensions using Ford models. Deals with Ford factory repair and servicing of power and standard steering systems.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

AUT 267 AUTOMOTIVE SUSPENSION AND BRAKING SYSTEMS

Presents the operation, design, construction, repair and servicing of braking and suspension systems. Explains use of tools and test equipment, evaluation of test results, estimation and repair cost, front and rear suspension alignment, power and standard steering, and power, standard and disc brakes in the Ford automotive family.

Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

ASSET POLICY & PROCEDURES

The following statements will be standard procedure for all students having academic and/or sponsorship difficulty in the ASSET program.

SPECIAL ASSET CURRICULUM REQUIREMENTS

An interview with a faculty member in the Automotive program and with a Ford Motor representative is required. Dealer sponsorship is mandatory before acceptance into the ASSET program. In addition, applicants are required to take the NVCC English, Math, Mechanical Aptitude, and Space Relations placement tests prior to admission to the program.

Any student whose final average falls below a "C" in any of the core courses within the Automotive ASSET programs must repeat the course and must earn a final grade of "C" or higher.

In addition to the above standardized procedures, any ASSET student who has been discharged (terminated) from his or her sponsoring dealer will be notified and released from the ASSET program. In the event of termination from the program the student will receive an automatic grade of "R" for ASSET current automotive courses requiring lab because of the students inability to meet minimum course requirements as described in the current College Catalog. All ASSET students will adhere to Northern Virginia Community College rules and regulations as found in the current Student Handbook and Catalog.

READMISSION POLICY

Any student who has withdrawn or who has been asked to withdraw from the program due to unsatisfactory performance may apply for readmission to the program the following year. Acceptance will be based upon availability of space, fulfillment of contingencies outlined at the time of withdrawal, faculty approval, and a personal interview.

GRADUATION REQUIREMENTS

Associate and Curriculum Degree Requirements

To be eligible for graduation with an associate degree (A.A.S.) from the College, you must:

1. Have applied and have been admitted to the curriculum;
2. Have fulfilled all of the course and credit hour requirements of the degree curriculum with at least fifteen (15) semester hours acquired at the college awarding the degree;
3. Have been certified by an appropriate college official for graduation;
4. Have earned a grade point average of at least 2.0 in all studies attempted which are applicable toward graduation in their curricula;
5. Have filed an application for graduation in the Office of Admissions and Records on or before the dates published in the Schedule of Classes for each semester;
6. Have resolved all financial obligations to the College and returned all library and other college materials;
7. Have met ASSET curriculum requirements.

SECTION V - PACKET

STUDENT AND EMPLOYER INFORMATION PACKET

The Automotive Student Service Educational Training program is designed to involve students in actual day-to-day work situations. This program was developed specifically to provide hands-on experiences that cannot be given on campus. Since students are in a real work situation, it is expected that they will adhere to all work rules and regulations maintained at their particular dealership. The primary purpose of the dealer field experience is to gain additional skills and experiences that are not available in the classroom.

Northern Virginia Community College operates on a semester system. Classroom time is limited to 3 weeks per semester, followed by 12 weeks of hands-on lab time. The College relies on the dealer work stations for this lab time.

Each semester all students and their dealers will receive packets explaining lab requirements for that reporting period. These packets are an effective evaluation tool.

Dealer field experience provides students the opportunity to explore and develop careers in actual work situations. It extends the concepts, skills, and theories learned in class to practical job applications and is designed to give the students hands-on experiences.

EVALUATION POLICY

The determination of a grade for dealership experience is based upon three criteria:

1. A special project report (graded);

OR

2. Class related daily log sheets (graded);
3. The dealer contact and evaluation form (graded);
4. The student contact and evaluation form (graded);
5. Completion of NVCC course requirements and lab contracts to be graded by the NVCC ASSET instructor.

The in-dealer coordinator will be given the necessary evaluation forms. The evaluation forms will be completed by the dealer coordinator and returned to the Program Head. This evaluation is used for performance objective completion.

Daily log sheets (minimum of 2 log sheets) per automotive class of related study are to be processed for vehicles that are serviced by the student while at the dealership. All completed daily log sheets are turned in to the Program Head.

A minimum of one special project each fall semester is required of each student. The special project report will be turned into the Program Head along with the daily log sheets and student evaluation form.

GRADING GUIDELINES

Grades will be lowered if the projects are turned in late or not typed. Extensions may be given on an individual basis if the coordinator is contacted prior to the project due date .

GRADE RANGE

90 - 100	=	A
80 - 89	=	B
70 - 79	=	C
60 - 0	=	R

The forms must be completed by the student and verified by either the supervising technician or by the ASSET dealership coordinator. Since we rely on the ASSET supervisor for the majority of the "hands on" field experience, cooperation in completing these objectives is essential to the success of the program.

Return all forms to: Program Head, Automotive Department
Northern Virginia Community College
3001 North Beauregard Street
Alexandria, VA 22311 (703) 845-6230

FALL SEMESTER TERM PAPER

60 points

The purpose of this project is to help orient the student to the dealership's procedures. Students may need information on the following areas to better familiarize themselves with the dealer's operation. The student selects one topic from this list. The paper must be typed, one page, double spaced (with one inch margins), on an approved subject:

Only typed papers will be accepted!

- * LATE NIGHT OR EARLY MORNING DROP-OFF PROCEDURES
- * IN PERSON DROP-OFF PROCEDURES
- * SERVICE WRITER PROCEDURES
- * ROUTING OF WORK TO TECHNICIANS
- * CUSTOMER CONTACT AFTER DIAGNOSIS
- * PARTS HANDLING TECHNIQUES
- * AN ORGANIZATIONAL CHART OF THE DEALERSHIP
- * HOW TECHNICIANS ARE PAID FROM REPAIR ORDERS
- * SELLING OF ADDITIONAL REPAIRS
- * LOT SECURITY
- * CUSTOMER PICK-UP PROCEDURES
- * COMPLAINTS AND COME-BACKS
- * STRENGTHS AND WEAKNESSES OF YOUR SHOP'S SYSTEM

DAILY CLASS LOG OF REPAIRS PERFORMED ON VEHICLES
60 Points

Name _____ Date _____

Class _____ Semester _____

=====

R. O. # _____ Make _____ Model _____ Year _____

Repair Order Instructions _____

Briefly Describe Repairs Made on Vehicle _____

=====

R. O. # _____ Make _____ Model _____ Year _____

Repair Order Instructions _____

Briefly Describe Repairs Made on Vehicle _____

=====

R. O. # _____ Make _____ Model _____ Year _____

Repair Order Instructions _____

Briefly Describe Repairs Made on Vehicle _____

STUDENT CONTACT FORM
20 Points

Date _____ Student Name _____

Please evaluate your performance below:

	ALWAYS	USUALLY	SOMETIMES
1. Are you at work on time?	_____	_____	_____
2. Is your work attendance satisfactory?	_____	_____	_____
3. Is your appearance neat?	_____	_____	_____
4. Do you work well with other employees?	_____	_____	_____
5. Do you show concern for doing the job correctly?	_____	_____	_____
6. Do you exercise proper care of tools and equipment?	_____	_____	_____
7. Do you study after hours with service manuals, etc.?	_____	_____	_____
8. Do you talk with your service manager or coordinator?	_____	_____	_____
9. Are your job assignments clear?	_____	_____	_____
10. Do your job assignments parallel school experience?	_____	_____	_____
11. What is your wage? _____			

Please make additional comments on the back of this form.

	OUTSTANDING	GOOD	AVERAGE	MARGINAL
OVERALL PERFORMANCE:	_____	_____	_____	_____

Has this report has been discussed with the dealer. YES or NO

Dealership Coordinator and Dealer Name Student Name



NATIONAL DEFENSE UNIVERSITY



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