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Other States' Incentives to Attract or Encourage Aerospace Manufacturing

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INTRODUCTION

This study was conducted at the request of Senator Liz Figueroa. The report provides a brief overview of the incentives that other states offer to attract and retain aerospace manufacturing industries.

There are two factors that have recently directed the attention of policy makers to aerospace. First, the role of this industry in the state's economy has changed significantly during the last decade. This is a consequence of a series of structural transformations that this sector has carried out to respond to sharp reductions in defense spending and commercial aerospace purchases. Second, the growth potential of aerospace and defense-related markets is still good, particularly for commercial space activities and other new product applications such as global positioning systems.

THE AEROSPACE INDUSTRY HAS BEEN SIGNIFICANT FOR THE STATE ECONOMY FOR MANY REASONS. In addition to being a source of employment, aerospace exports have been an important source of growth. Aerospace and defense-related activities have a high concentration of highly specialized occupations. Wages in these industries are higher than in the rest of manufacturing industries. Moreover, aerospace and defense have played an important role as an incubator of new technologies with spillover effects to other industries.

THE CALIFORNIA AEROSPACE INDUSTRY PROVIDES A SIGNIFICANT SHARE OF U.S. AEROSPACE EMPLOYMENT. In 1998 the California aerospace industry provided 170,900 jobs or 22 percent of U.S. aerospace jobs. Three main industries make up the aerospace sector: aircraft, missiles and space vehicles, and search and navigation. In 1998, California firms provided 36 percent of national employment in the search and navigation industrial sector, 28 percent of the employment in the U.S. missiles and space vehicles industry, and 17 percent of U.S. employment in the aircraft and parts industry.

THE AEROSPACE INDUSTRY IS HIGHLY CONCENTRATED. Aerospace is a highly concentrated industry with relatively few firms. The nature and the characteristics of aerospace manufacturing explain the concentration of this industrial sector. These characteristics make it difficult for new firms to enter into the aerospace market. Aerospace is a capital-intensive industry that requires large amounts of investment and a high proportion of skilled labor. The industry also has high labor costs (labor costs are equivalent to one-third of the revenues) and high technology requirements.

Two major events during the last decade have helped to increase the concentration of this industry. First, since the end of the Cold War, a dramatic reduction in defense spending

and demand for military-related products and programs has taken place. Second, in the early 1990s, as the world fell into a recession, there was a sharp reduction in the demand for commercial aircraft. To adjust to these changes, firms looked for ways to remain profitable by cutting costs and consolidating companies, programs, and processes.

The pace of mergers has left the United States with just three major players in the military aerospace sector (Lockheed Martin, Boeing, and Raytheon) and a duopoly (Boeing and Airbus) serving the world commercial aircraft market. Some of the major mergers that took place during the 1990s include:

- The acquisition of the aerospace business of General Electric by Martin Marietta and the purchase of the military aircraft business of General Dynamics by Lockheed in 1993.
- The acquisition of Grumman by Northrop in 1994, and the purchase of Westinghouse Electric's defense and electronics systems by the new Northrop-Grumman in 1996.
- The acquisition of Martin Marietta by Lockheed in 1995, and the acquisition of Loral's Defense Electronics and System Integration Businesses by Lockheed-Martin in 1996, together with Lockheed-Martin's investment in other Loral's operations.
- Boeing's acquisition of the defense operations of Rockwell International in 1996, and McDonnell Douglas soon after.
- Raytheon's incorporation of the defense electronics business of Hughes Electronics and the defense systems and electronics unit of Texas Instruments in 1997.

THE PRESENCE OF THE AEROSPACE INDUSTRY HAS DECLINED IN CALIFORNIA. The consolidation of the industry resulted in the state's loss of various aerospace operations and a drastic reduction in employment. These losses have been intensified as other states competed with a variety of economic and political incentives for capturing major programs and businesses. The loss of defense-related aerospace activities significantly affected the California economy due to the high state share of U.S. aerospace employment (almost one third in 1986). Today, California employment in the aerospace industry is less than half of what it was in 1986. Since 1990 the California aerospace industry has lost about 166,300 jobs. In 1990, California's share of national aerospace employment was 29 percent, significantly higher than the 1998 share of 22 percent.

Beyond the job losses, the state has seen the erosion of its position as a prominent manufacturing center of large aerospace platforms (such as military and commercial aircraft, missiles, and expendable rockets). With consolidation, many of the industry's corporate headquarters and top management teams left California. Currently Northrop-Grumman and Litton Industries are the only large aerospace firms headquartered in Southern California. The loss of corporate headquarters of the largest prime contractors such as Hughes Electronics and Lockheed Martin reduces the influence that the state has

in retaining and attracting aerospace operations since the decision making on these operations is generally negotiated by the corporate offices.

There are also other structural changes brought about by consolidation. For example, the consolidation process has affected local supplier businesses in different ways:

- The U.S. aerospace consolidation is causing a large but shrinking pool of vendors to vie for a dwindling number of preferred supplier positions. The most vulnerable suppliers are those who have not developed a strategic relationship with the new companies.

- A collateral result of mergers has been an increase in vertical integration. With vertical integration a company controls all facets of its production. This could mean that independent suppliers have no chance to participate in the production process. However, according to some executives of the industry, vertical integration may not be a threat to suppliers since companies know that they will get the best product at the best price by subcontracting the work to companies who specialize. Many firms are becoming airframe and systems integrators. In other words, they are putting together products with components purchased from the best suppliers rather than manufacturing the entire product themselves.

- Suppliers have also been affected by the new actions of the Department of Defense (DoD). To promote the commercial use of military products, the Department of Defense has changed the specifications of its contracts. Suppliers are shifting away from military specifications to commercial standards and processes. While this shift promises greater flexibility, it has forced new requirements on small suppliers. One program is the DoD's Single Process Initiative. This initiative was intended to allow primes to expedite the conversion to commercial processes, and it introduced changes that are very hard for small suppliers to comply with and understand. Suppliers have criticized the DoD's Single Process Initiative and an acquisition reform initiative is being pursued by the industry in order to solve these problems.

- Suppliers are also affected by globalization. As the structure of the aerospace industry is responding to the needs of a global economy, domestic suppliers are facing increased competition from international suppliers. With the integration of world markets, companies are expanding their teamwork with international firms.

GROWTH PROJECTIONS FOR CALIFORNIA AEROSPACE AND DEFENSE MARKETS ARE OPTIMISTIC. Not all the transformations in the aerospace industry are negative for California. Aerospace has transformed from a defense-focused business competing for declining government dollars, to a more commercial and technology-focused industry.

New market opportunities could more than offset the recent downward trends. Commercial space business is one of the most promising prospects of the next century, and California is leading the way into this new venture. There is great potential in the industry's increasing number of business ventures that combine defense and aerospace technologies with information, entertainment, and telecommunication activities. For example, many movie special effects are the result of technological advances by the defense industry, such as computer simulations used to prepare forces for combat.

In particular, California aerospace is benefiting from the growing importance of information warfare. This term refers to the rapid transfer of information among various units in the air, on the ground, and at sea. The strong information industry in California makes it easier for firms here to use these technologies.

STATE POLICIES CAN ENHANCE CALIFORNIA'S COMPETITIVENESS FOR HIGH-GROWTH, HIGH-TECH AEROSPACE BUSINESSES. The emergence of new market opportunities together with the structural changes have placed the state in a better position to compete in commercial space and commercial applications of defense products. However, the state is competing with other locations that may provide a more advantageous environment to do business. California's ability to retain aerospace activities could be strengthened by policies that create favorable business conditions for this industry.

Compared to other states, California's abundance of skilled labor, universities and other educational and research centers, as well as the existence of a strong electronics industry give the state a strong advantage for the development of high-tech aerospace activities. However, according to aerospace firms, California's high-cost of doing business, taxation policies, and state and local regulations have made other states such as Texas, Georgia, and Alabama, competitive locations. According to Mr. David Brown from Boeing, a survey conducted by the firm in the states where Boeing operates indicated that California was the second most costly state.[1] These states have been investing heavily in their local aerospace and defense industries and have been successful in attracting some defense programs. An example is Boeing's selection of Alabama over Huntington Beach for the Delta IV rocket program.

The favorable California environment for high-tech activities is evident from the aerospace companies' decisions on where to locate projects. California has been able to retain production of complex components, but not final assembly work. For instance, Boeing is generally keeping in California high-end, complex components, as well as prototype, short-run vehicle production (including rocket engines, space power systems, lasers, satellites, expendable and reusable launch vehicles, missiles, navigation, sensors, demonstration vehicle, prototype vehicle assembly and test, and X-vehicles). Another example is Lockheed Martin's advanced cruise missile program. Prototype testing and evaluation of the first few units are going to be done in their plant in Palmdale, California. Once proven, final assembly is scheduled for a new facility in Alabama.

It is in California's interest to focus on those dynamic high-tech new segments of the industry, rather than traditional areas that have a lower growth potential. To help the retention and expansion of high-growth potential aerospace activities in California, policy makers need to be aware of:

- The new structure, options, challenges, and opportunities of this industry.
- The type of policies that competitor states are implementing.
- Effective policy-options that would help the development of new aerospace activities.

In this context, the purpose of this paper is to inform policy makers of other states' policies that affect plant location and business expansion decisions in the aerospace sector. This brief also suggests some policy options that would help the development of modern aerospace activities in California.

IMPORTANT FACTORS INFLUENCING PLANT LOCATION AND BUSINESS EXPANSION DECISIONS

A variety of studies show that the following factors play a key role when businesses consider the location and expansion of their operations in a geographic area:

- ***LABOR COSTS.*** The cost of labor is an important factor determining business location, particularly in a labor-intensive industry such as aerospace. Compared to other states that have a significant presence of aerospace industries, California labor costs are about average. Using average hourly earnings in manufacturing as a measurement of labor costs, California's average of $13.67 is below the average of Washington ($15.75), Connecticut ($14.83), Kansas ($13.85), and Massachusetts ($13.79). Lower labor-cost states are Arizona, Texas, Alabama, and Georgia. The lowest labor-cost state among those with a significant presence of aerospace industries is Florida ($11.43).

  A significant portion of labor costs can be workers' compensation. Many states have been changing their workers' compensation laws in order to decrease the cost of doing business in their states. Before 1995, California was among the states with the highest workers' compensation costs. However, the worker's compensation legislative reform introduced in the early 1990s significantly reduced California worker's compensation costs. Currently California ranks among the moderate cost states in workers' compensation costs.

- ***AVAILABILITY OF SKILLED LABOR.*** The availability of a highly educated labor force is very important for high-technology industries. Educational policies, funding for universities and colleges, and proximity to university and other educational centers are important criteria for the location and expansion of high-tech manufacturing, such as aerospace. The abundance of skilled labor in California makes it an attractive site for high-tech industries.

- ***PROXIMITY TO MARKETS FOR INPUTS AND OUTPUT.*** Firms tend to locate in areas where there is already a geographic concentration of related companies sharing technical, financial, and/or product-distribution patterns. These industrial clusters develop specialized buyer-supplier relationships and share specialized infrastructure, labor markets, and services. The location within an industry cluster facilitates working with neighboring suppliers on product quality and innovation, and makes it easier for the business to obtain financing.

- ***INFRASTRUCTURE.*** Firms need infrastructure to accommodate their employees and businesses. The proximity to adequate ports, airports, and railroads is important for the distribution of the firms' products within the U.S. and abroad. California's transportation system is operating at full capacity in all highly populated areas. Roads are congested. California's ports and airports are nearing

capacity. With increased economic growth and world trade, pressures on the existing transportation system will increase.

Governor Davis is creating a Commission to focus on infrastructure improvements (ports, transportation, airports, etc.), including the establishment of spaceports throughout the state. A block of money is to be allocated through the Infrastructure Bank for development activities including the support of commercial space in California.[2]

- ***QUALITY OF LIFE.*** Quality of life includes a variety of aspects such as transportation facilities for employees, affordable housing, cultural events and amenities, a healthy environment, attractiveness of the community landscape, the quality of the educational system, weather, low crime, and the time spent in commuting to the work place. For example, the industries located in Silicon Valley have pointed out that it is very difficult to attract labor into the area since housing costs in Silicon Valley are among the highest in the nation.

- ***UTILITY COSTS.*** An issue that is particularly important in plant site discussions is the price businesses pay for the electricity used to run their plants. To be more competitive, some states are pursuing ways to lower electricity rates. Examples of these policies are the proposals for deregulation of the electricity industry in California and Texas, and the electricity sales tax exemption in Georgia and Colorado.

- ***PROPERTY COSTS.*** A significant cost for businesses is the acquisition of their building and plant structures. Property values in California are significantly higher than in other regions in the United States. California economic opportunities, high quality of life, and favorable weather conditions have attracted a large population to the state. Population pressures have increased the cost of property, particularly in fast-growing areas.

- ***GEOGRAPHICAL PREFERENCES OF OWNERS OR TOP EXECUTIVES.*** Studies have identified geographical preferences of owners or top executives as one important element for site-location selection.[3] According to many economic development professionals, the most potent factor in retaining and expanding businesses is the company's original choice of location. Firms tend to stay where they have originally located, unless their competitiveness is dramatically threatened by changes in the business climate. The original location may have been chosen based on advantages that currently no longer exist; however, firms do not move easily. When companies move, they do it for reasons that vary from company to company.

- ***THE ROLE OF CORPORATE HEADQUARTERS LOCATION AND CONDITIONS IN NEW MERGERS AND ACQUISITIONS.*** The recent merger and acquisition process that has taken place in the aerospace industry has affected the specialization and location of the various plants of those merging companies. The activities of the consolidated firms have been rearranged according to the new needs of the

combined industry and new production plans. These choices tend to be made by the company that controls the merger, based on the geographic distribution of capital, professional resources, and the need of integration of various firms' activities to meet the new production goals. According to some analysts, compared to these structural factors, business climate considerations seem to play a marginal role in location decisions.

- ***STATE POLICIES.*** State policies affect the cost of doing business in a given state. State policies that lower business costs and are expected to be important in the decision of business location are:

  - Those that speed up the regulatory processes (particularly the permitting process);
  - Those that alleviate state and local general taxation policies; and
  - Those industrial development policies, including targeted tax incentives and other policies, specifically tailored to support aerospace activities.

  Although less regulation and less taxation benefit businesses through cost savings, the existence of an elaborate regulatory system and taxes help to maintain the quality of life in the state. Government regulates business to maintain a safe workplace and to insure a high quality of life. Environmental regulations protect the state environment from deterioration and protect the health of the state population. The state needs the money collected through taxation to provide public services and public infrastructure. Businesses are attracted to areas where the quality of educational and research institutions is high and where the transportation system is efficient. In a global sense, businesses tend to weigh the costs of taxation and regulation relative to the benefits that they receive. It is up to the state to achieve a balance that is competitive with the business environment of other states.

- ***POLITICAL SUPPORT.*** Firms tend to establish themselves in friendly environments, where state and local governments are supportive and sensitive to the industry's needs. For aerospace companies, the support of the congressional delegation and the influence of representatives in the contract award decisions are critical. Industry analysts report that aerospace companies expand their presence throughout various states to gain extra political support, rather than just concentrating their activities in fewer states with very good business climates.

OTHER STATES' POLICIES RELEVANT TO AEROSPACE PLANT SITE-LOCATION DECISIONS

EXPEDITED REGULATORY PROCESS

During the last several decades, there has been a profusion of regulatory bodies in most states. At times, these functions can overlap. For instance, in some states, there is more than one agency responsible for issuing licenses or issuing permits for a single project. It can be difficult for a business to identify the numerous agencies from which permits must be obtained, thereby increasing the costs and time for obtaining permits. The requirements imposed by different agencies can be duplicative or sometimes contradictory.

Many states have been working to simplify permit processes. For instance, the Texas Department of Commerce has a permit assistance program for businesses. Assistance consists of permit coordination between various agencies, and the arrangement of pre-permit meetings. In certain cases, they have been successful in expediting the permit process in the state.

Aerospace executives have indicated in many instances that California's cumbersome and less expeditious regulatory system is one of the main factors that drives the industry out of California.[4] Aerospace representatives cite the state environmental regulations as one of the major problems for the industry. Although they recognize the need for environmental protection, industrial representatives feel that the regulatory process can be more efficient. During the last few years, many laws have been introduced in California to simplify the environmental and business regulatory systems. The executive branch has given priority to the coordination of activities between various state agencies, which has resulted in substantial regulatory streamlining. The Governor's Office is considering establishing a new position in the California Environmental Protection Agency to act as a liaison between the aerospace industry and the administration on environmental issues.[5]

GENERAL STATE AND LOCAL TAXATION POLICIES

General tax policy refers to tax law provisions that apply to everyone who is liable for a tax, not to exemptions, deductions, or credits targeted to particular kinds of business or activities. State taxes are important since the overall state tax burden can exceed the federal tax burden. Companies have to consider several taxes when comparing sites in various states.

CORPORATE INCOME TAXES. For many companies, state income taxes are significant. In addition to tax rates, a very important issue for businesses that have operations in various

states or other countries is how these taxes are computed. The state income tax applies to the proportion of the company's total income generated in the state by the firm. Businesses complain that the corporate income tax paid on the percentage of state sales in the total world sales can be unfairly calculated. A key issue is how the state's income proportion is calculated.

States generally use two alternative methodologies to calculate the taxable state income generated by multistate and multinational companies, the so-called three-factor and four-factor income apportionment formulas. State income is calculated as a proportion of the company's business presence in a state, which is measured by three factors: sales, wages paid, and property held by the firm. The apportionment formulas vary in the relative weight given to these three factors. Under the four-factor formula, the percentage of state sales in the total world sales has more weight (it is counted twice).

The use of a given formula can result in considerable tax savings depending on the company's relative sales, property and wage bases. For example, the use of the four-factor, double-weighted sales formula results in considerable tax savings when a company's sales percentage in the state is smaller than the wage and property percentages. Various states, including California, have used the four-factor formula as an economic development tool. High technology industries in many states have benefited from the change from a three-factor to a four-factor income apportionment formula.

California was one of the states with the highest corporate tax rates. In 1996, the California legislature approved a five percent corporate and business tax cut starting January 1997. Currently, state corporate income tax rates range from 0 to 10.5 percent, depending on the type of business (for example, there are special rates for banks and certain types of corporations).

Table 1 shows the corporate tax rate for states where the presence of the aerospace industry is significant (as measured by their share of national aerospace employment). Among these states, California corporate tax rates are relatively high. As of January 1, 1999, only Massachusetts, Minnesota, and Pennsylvania have higher rates than California. Corporate taxes in Kansas, Alabama, Colorado, and Utah are significantly lower than in California. Washington, a state with a significant share of U.S. aerospace employment, does not have a corporate income tax.

Table 1

State Corporate Income Tax Rates in States With High Aerospace Employment

State	Tax Rates	Tax Brackets Range	Number of Brackets
ALABAMA	5	----Flat Rate----	1
ARIZONA	8	----Flat Rate----	1
CALIFORNIA	8.84	----Flat Rate----	1
COLORADO	5	----Flat Rate----	1
CONNECTICUT	8.5	----Flat Rate----	1
FLORIDA	5.5	----Flat Rate----	1
GEORGIA	6	----Flat Rate----	1
ILLINOIS	7.3	----Flat Rate----	1
INDIANA	7.9	----Flat Rate----	1
KANSAS	4	----Flat Rate----	1
LOUISIANA	4.0 - 8.0	25,000-200,000	5
MARYLAND	7	----Flat Rate----	1
MASSACHUSETTS	9.5	----Flat Rate----	1
MINNESOTA	9.8	----Flat Rate----	1
MISSOURI	6.25	----Flat Rate----	1
NEW HAMPSHIRE	7	----Flat Rate----	1
NEW JERSEY	9	----Flat Rate----	1
NEW MEXICO	4.8 - 7.6	500,000-1 million	3
NEW YORK	9	----Flat Rate----	1
NORTH CAROLINA	7	----Flat Rate----	1
OHIO	5.1 - 8.5	50,000	2
PENNSYLVANIA	9.99	----Flat Rate----	1
UTAH	5	----Flat Rate----	

PROPERTY TAXES. A state's property tax burden can be an important factor for a company considering locating in a given state. Property tax rates vary from state to state. These differences can be substantial. For instance, in California, property tax rates are one percent of assessed value, which can be significantly below fair market value, with increases capped at two percent a year. In Texas, rates range between two to three percent of fair market value. These differences can be substantial for a capital-intensive company that plans to construct a $2 billion facility. The company's first year property tax burden may total $20 million in California, while in Texas it would be $50 million. To alleviate high property tax rates, many states provide special incentives or depreciation schedules for equipment and inventory exemptions.

SALES AND USE TAXES. With the high cost of materials and equipment used in manufacturing, companies are increasingly paying attention to sales and use-tax policies.

Sales and use taxes are taxes on transactions. The sales tax policy from state to state can have a significant impact on businesses.

Besides the sales and use tax rates, there are generally three major issues for manufacturing facilities.

1. ***The Taxation of Manufacturing Machinery, Equipment, and Repair Parts.*** Sales taxes apply to the purchase of tangible personal property such as equipment within a state. In transactions where no sales tax applies, a complementary tax (use tax) may apply. For instance if equipment bought in Texas is transferred to California, California can impose its use tax. Most states, including California, provide an outright sales tax exemption for manufacturing supplies and equipment.

2. ***The Taxation of Manufacturing Consumables.*** Very few states offer an exemption for items that are consumed or used during the manufacturing process but do not become part of the finished product (for example, lubricants). In many cases, this is a cost that is significant for the industry.

3. ***The Taxation of Utilities and Fuel.*** Most states allow some exemption for utilities used in the manufacturing process, but there are different methods to apply these exemptions. These methods may make a difference for certain industrial activities. Most states allow some type of exemption for utilities used in the manufacturing process. In Georgia, for instance, electricity sales tax exemption applies to purchased electricity for product manufacturing, as long as the total cost of the electricity is at least 50 percent of the total cost of the product.

Table 2 shows sales tax rates for states with a high share of national aerospace employment. California is one of the states with the highest sales taxes. Among the states with highest sales tax rates are Washington, Texas, and New York. Alabama and Louisiana have the lowest sales tax rates (four percent), while New Hampshire does not have sales taxes.

Table 2

Sales and Use Taxes in States With High Aerospace Employment

State	Average Tax Rate Percentage	Exemption for Consumable Supplies Used in Manufacturing	Exemption for Manufacturing Equipment
ALABAMA	4.00	No	Partial Exemption
ARIZONA	5.50	No	Exempt
CALIFORNIA	7.25	No	Partial Exemption
COLORADO	4.00-7.40	Yes	Generally Taxable
CONNECTICUT	6.00	Yes	Exempt
FLORIDA	6.00	No	Partial Exemption
GEORGIA	5.00	No	Exempt
ILLINOIS	6.30	Yes	Exempt
INDIANA	5.00	No	Exempt
KANSAS	4.90-5.90	No	Exempt
LOUISIANA	4.00	No	Generally Taxable
MARYLAND	5.00	No	Exempt
MASSACHUSETTS	5.00	Yes	Exempt
MINNESOTA	6.50-7.50	Yes	Taxable
MISSOURI	4.75-5.50	Yes	Exempt
NEW HAMPSHIRE	No Tax	N/A	N/A
NEW JERSEY	6.00	Yes	Exempt
NEW MEXICO	5.70	Partial	Taxable
NEW YORK	7.00	Yes	Exempt
NORTH CAROLINA	6.00	No	Taxable at Reduced Rate
OHIO	6.00-7.50	Yes	Exempt
PENNSYLVANIA	7.00	Yes	Exempt
TEXAS	7.80	Yes	Exempt
UTAH	5.90	No	Partial Exemption
WASHINGTON	6.50	No	Exempt

Source: Jergigan, Cliff. High Tech Survival. U.S. 1996, and data from "Directory of State Incentives," *Area Development,* Easton, Pennsylvania, January 1999

AN ASSESSMENT OF TOTAL BUSINESS TAX BURDEN BY STATE. It is difficult to obtain accurate and reliable comparisons of the tax burden among states. States have different rates and structures of state taxes, coupled with the effects of exemptions, exclusions, deductions, credits, and special provisions making comparisons of the business tax burden very difficult. The mix of taxes also matters: a state may compensate for low income taxes with high property taxes. When comparing the business tax burden by state for a particular industry, detailed information of the financial records of the individual firms is also needed.

According to a recent study, California has a higher tax burden than the national average. An economic development consultant to state and local government examined the tax

burden placed on a state's total business community.[6] The report included a model that computes estimates of state and local taxes and fees for business taxpayers and produced a measure that expressed the tax burden as a percent of the state's gross product. The study ranked all states according to their business tax burden. Out of the 25 states with the highest share of aerospace employment, California has the ninth highest tax burden in that ranking. According to the study, states with high aerospace employment and a low tax burden were Georgia, New Jersey, Connecticut, Ohio, and Alabama. Florida, Washington, Missouri, and Texas have the highest business tax burdens.

STATE DEVELOPMENT POLICIES AND INCENTIVES

Few states have specific policy incentives targeted to attract and retain aerospace industries within their geographic limits. However, most states have policies designed to attract a broader group of manufacturing activities, within which aerospace is included. The main objective of these broader policies is to improve the state business climate to promote the type of development states most want. For instance, most states have created a wide variety of incentives to promote high-technology development. Since the aerospace industry is a high-tech industry, these policies benefit aerospace and are discussed here.

To improve the competitive advantage of existing and emerging businesses, some states have a comprehensive package of economic development policies based on strategic planning. Others just have a variety of independent programs or policies such as business capital and funding programs for different types of businesses, enterprise zones, defense conversion, market development, export financing, strategic technology, tax incentives targeted to selected activities, and others.

STRATEGIC PLANNING: REGIONAL-CLUSTER SUPPORT. Many states have initiated an integrated economic planning effort. Some economic development agencies have increasingly been focusing on supporting regional industry clusters, rather than targeting individual firms or businesses. One example is Arizona's Strategic Planning for Economic Development. The plan focuses on the development and support of industrial clusters by creating business conditions to attract and retain the firms that are part of these clusters. Planning efforts such as the one in Arizona start by identifying industrial clusters their geographical locations, and their needs. Policy incentives to attract and retain firms within the cluster are an integrated part of the economic development policies designed for these clusters.

A similar effort has been initiated in California through the Regional Technology Alliances (nonprofit corporations established by legislation and funded by state, local and private funds, for the revitalization of the Los Angeles, San Diego, and San Francisco Bay regions). The alliances' work emphasizes the linking of companies with ongoing activities and resources. Their mission is to strengthen and sustain the region's technology base through direct assistance, networking, and information.

A California effort to support space activities is the California Space and Technology Alliance. It is also the state's official spaceport authority. The Alliance is an industry-driven nonprofit corporation that serves as a policy advisor to the Governor and State Legislature on all space-related matters. The board is represented by a variety of members from the private and public sector. CSTA receives funds from both the private and public sector. This organization is asking for state funding to expand its activities. The organization would leverage the state investment with industrial resources.

CSTA acts as a liaison between the private space and technology sector and governmental entities at the state and federal levels. The purpose of CSTA is to act as a unified industry voice in promoting public policies that would benefit commercial space activities. CSTA seeks to foster the development of activities related to space flight including space education and job training, infrastructure and research projects, manufacturing support programs, and business development. One of the activities of CSTA is briefing the California Congressional Delegation members and staff on the economic role and developmental needs of the California commercial space industry, and gaining their support at the federal level to keep California in the space race. For example, one of the projects pushed by the alliance is to capture the VentureStar project for California. VentureStar is a $5 billion project that will develop a fully reusable single stage-to-orbit vehicle, a major technological breakthrough in space launching.

TARGETED TAX INCENTIVES. The most commonly used techniques to promote state and local economic development strategies involve tax cuts and business tax incentives. The appendix of this document has a brief summary of various development policies (including tax and business incentives) that are offered by the 25 states with the highest share of U.S. aerospace employment.

Targeted tax incentives are created to benefit a limited number of taxpayers, or even an individual taxpayer (in the case of specific deals), to encourage some specific activity. Among the most frequently used tax incentives are investment, job creation, and research and development tax credits.

Tax Incentives for Investment. Many states provide special incentives or depreciation schedules for equipment. Some states may grant property tax abatements of up to 10 years on new plants and equipment. For instance, Alabama law provides that ad valorem tax abatements of up to 10 years may be granted to new and/expanding businesses. That state also has a capital investment tax credit of up to five percent of capital cost per year for 20 years to qualified new and expanding companies. California, Massachusetts, Colorado, New Hampshire, New Jersey, New York, New Mexico, and North Carolina also offer investment tax credits. Other states, including Kansas, Georgia and California, offer investment tax credits to businesses located in enterprise zones.

Plants in California aerospace industries are becoming obsolete.[7] The state of art of the existing plant infrastructure needs to be updated. A potential policy measure to help the industry to become more competitive is the establishment of additional special tax incentives for investment in new plants and equipment.

Net Operating Loss Tax (NOL) Treatment. NOL treatment provisions have significant economic value for industries facing heavy restructuring costs, such as aerospace and defense-related industries. These provisions allow businesses that experienced losses in a given year to deduct these losses from the income earned in the following years. How these losses are deducted and for how many years depend on the states specific legislation. Until 1993, California was one of only two states with corporate income taxes that did not offer NOL treatment. Beginning in 1993, a 100 percent net operating loss carryover for up to five years for small businesses and up to eight years for new business was introduced.

Tax Incentives for Job Creation. Most states have policies that promote job creation. For example, Ohio offers a job creation tax credit of up to 75 percent (or more under extraordinary circumstances) for up to 10 years against the corporate franchise tax for businesses that expand or re-locate there. Many of the specific tax incentives for job creation policies in other states, including California, are part of more general policies, including enterprise zone development programs. With the exception of New Hampshire, all the states with a high proportion of U.S. employment in the aerospace industry have programs that offer special incentives for businesses that locate in designated geographic locations referred to as enterprise zones. With the exception of New Mexico, all enterprise zones have tax incentives for job creation. (A summary of economic development policies, including tax incentives for job creation, is provided in the appendix).

Research and Development Tax Incentives. Many states have enacted research and development tax credits similar to the federal Research and Experimentation Tax Credit Program, enacted as part of the Economic Recovery Act of 1981.[8] One of the main issues with the credit is that it is not permanent. Although this credit is important in lowering a company's tax rate, the credit formula is quite complex. Most states have tax exemptions to encourage research and development. Some states such as Colorado provide this exemption only to businesses located in enterprise zones. Other states such as Texas, Georgia, New Hampshire, Alabama, and Utah do not offer incentives for research and development.

New Mexico provides for a 100 percent tax deduction for aerospace research and development costs. In order to qualify for the deduction, a research and development firm must sell services to the United States or its agencies for aerospace research and development, or operate a proposed spaceport for the launch and recovery of reasonable spacecraft, in addition to other specifications.

California tax law allows companies to deduct a proportion of qualified research expenses and basic research payments paid in cash to outside companies. In 1996, the state enacted a 35 percent increase in research and development tax credits effective January 1, 1997. Despite the increase, firms feel that the research and development tax credits need to be redefined for this policy to have a significant effect on the industry's costs. The research and development tax credits for the aerospace industry were established when the aerospace industry was booming in California, and threshold

amounts to claim this credit were calculated in relation to the high levels of aerospace activity observed at that time. To make it easier to qualify for these credits and increase the effectiveness of this policy, new threshold amounts of research expenses need to be established to reflect the loss of jobs and the smaller presence of the industry.[9]

ENTERPRISE ZONES. Most states have programs that offer special incentives for businesses that locate in designated geographic locations referred to as enterprise zones. These zones are typically economically distressed areas. States utilize different economic criteria when offering incentives to businesses located in or moving to these zones. A brief description of other states' enterprise zone programs in states with high aerospace employment is included in the appendix.

States utilize different economic criteria when offering incentives to businesses located in or moving to enterprise zones. For instance, Georgia, and North Carolina use a system that ranks counties based on the degree of economic distress, and offer graduated incentives according to the county's ranking. Washington State allows a special tax credit in several different areas, including designated distressed counties, community empowerment zones and metropolitan areas in which the unemployment rate exceeds the state rate by 20 percent.

In California, enterprise zone incentives include substantial tax credits; for example, up to 100 percent net operating loss carry-forward for 15 years. Firms can earn $26,894 or more in state tax credits for each qualified employee hired. Corporations can earn sales tax credits on purchases of $20 million per year of qualified machinery and machinery parts. Unused tax credits can be applied to future years. Benefits also include other property and investment tax incentives.

Arkansas has the Aerospace Enterprise Zone Act, which is very similar to the Enterprise Zone legislation but it is specifically tailored for the aerospace sector. It provides exemptions from state and local sales and use tax, and allows an industry to claim a state income tax credit of $2,000 for each net new employee once certain criteria are met.

DEFENSE CONVERSION. In some states, there are specific policies to ameliorate the effect of defense budget cuts on their defense-related industries. Defense conversion efforts assist defense-related businesses to transition into new commercial markets. Some programs include matching grants and technical assistance for defense-conversion activities. For example, Florida has the Qualified Defense Contractor Tax Refund Program designed to minimize the negative economic impact of defense downsizing in that state. The program provides for a tax refund for every job saved through conversion of defense jobs to civilian production, the acquisition of new defense contracts, and the reuse of defense facilities. California has a defense conversion matching grant program through Regional Technology Alliances and industry consortia.

Military/Defense Reuse Zones. States also provide incentives for the reuse of defense facilities. Arizona has a military reuse zone credit for net increases in employees working in a designated military reuse zone. The program targets aerospace industries

willing to locate on a former military base. To qualify for credits, employees must engage primarily in manufacturing, assembling, or fabricating aerospace products. Incentives include lower property assessment ratios for a period of five years, tax credits for job creation, and transaction privilege tax exemption. Arizona also provides a variety of tax incentives for defense contractors.

The California Local Agency Military Base Recovery Act provides for designated communities to offer an enterprise zone based tax incentives to businesses that locate at closed military bases. California has the Defense Conversion Council, formed in 1993, as a policy-making body and clearinghouse for all base reuse and defense conversion programs in the state.

SPECIFIC DEALS. In addition to state policies oriented to enhance development in various business areas, states also offer selective packages targeted at single projects. These packages are a combination of special incentives created to attract or retain a particular firm. Incentives include payments for job creation, property tax breaks, discounted rates for electricity, grants for worker training, sales tax breaks, infrastructure support, and others. Incentives vary with each deal.

These packages can be quite generous and may be designed by both the state and local governments. However, the public rarely knows the specific incentives offered in these packages since states are secretive about these deals. One example that became public, at least in part, is the package of incentives offered to Boeing recently by both Florida and Alabama to convince this company to build its Delta-IV rocket plant in their states.

Brevard County and the State of Florida offered the Boeing Company $37 million property tax break to construct a plant in Brevard. The state of Florida's package included sales tax exemptions on the purchase of new machinery, payments of up to $5,000 for each job created, discounted rates for electricity, and acceleration of the permitting process. In addition, the state had offered to provide money for worker training, and road and infrastructure repair. Other positive elements that Brevard County offered to Boeing are a highly skilled worker force already living in the county and excellent shipping access.

The state package was designed to rival Alabama's, an alternative location for the Boeing plant. Despite of all the advantages offered by Florida, Boeing chose to build their plant in Alabama. One of the incentives that Alabama offered and Florida did not match was an annual corporate income tax break of five percent of the new plant total investment. To many, the Boeing decision was not a matter of dollars but politics. It was more important for Boeing to expand their activities to other states rather than increase their base in Florida. In this way, another state with their U.S. senators and representatives will be supporting issues of Boeing's interest.

INDUSTRY-GOVERNMENT PARTNERSHIPS FOR THE DEVELOPMENT OF AEROSPACE. These programs are important because they provide a mechanism for industry leaders to work with government for the solution of problems that affect aerospace activities. There

are several examples where the government collaborates with the industrial sector in supporting the development of the aerospace industry. Some of these are:

- ***Aerospace Industry Association of Oregon.*** It was created through a partnership of industry and the Oregon State Economic Development Department to develop a strategic vision for this industry in Oregon and to improve the industry's global competitiveness. In Oregon, key industries identified by the state have formed their own associations. Each association competes for funds from the Oregon State Economic Development Department. This organization has some California members.

- ***Washington Aerospace Alliance.*** This is an alliance that promotes collaboration among Washington aerospace suppliers to reduce manufacturing costs, improve productivity, develop new products, increase sales, and organize strategic marketing initiatives on behalf of the industry. It serves as a voice for the industry in working with government, as well as to increase business opportunities and benefits to Washington aerospace companies. Priorities are networking events and workforce development**.**

- ***Virginia Aerospace Business Roundtable.*** The state, through Virginia's Center for Innovative Technology (CIT), supports the Virginia Aerospace Business Roundtable, which serves as a business networking group among industrial, academic, and government interests and participates in Virginia economic planning for aerospace. Space companies are brought together in seminars and informal meetings.

California examples of this kind of initiative are the California Space and Technology Alliance and the Antelope Valley Aerospace Alliance. As noted earlier, the California Space and Technology Alliance is an industry-driven nonprofit organization to foster the development of commercial space flight activities. This alliance is developing a Space Strategic Plan with the collective participation of various parties, companies, cities, public agencies and nonprofit organizations.

The Antelope Valley Aerospace Alliance includes contractors, government, and community organizations. Important objectives of this organization are cost reduction, product improvement, and to provide leadership by bringing aerospace problems to state representatives. For example, thanks to this organization, contractors that have lost contracts have worked agreements to exchange productive resources (including employees) to those competitors that have won the contracts. In this way, the employees keep the continuity of employment and benefits while the company saves the expenses of laying off and hiring employees. The alliance also participated actively in the successful effort to keep the B1 program in California when this program was going to be undertaken by the Air Force in Oklahoma. Currently they are looking for ways to reach and expand the participation of aerospace sub-contractors and suppliers in the organization.

California also has the "Red Teams," teams of business and government representatives that collaborate to solve business problems or encourage companies to expand in California. The Red Team approach was created by the administration of Governor Wilson. This type of effort has been successful in bringing business to California. One example is the retention of Special Devices Inc. in Southern California, a designer and maker of devices and systems used in missiles, aircraft, satellites, automotive and rocket launch applications, that considered leaving the state. Other examples attributed to this type of effort are the attraction of NASA's X-33 reusable launch vehicle program to Lockheed Martin in Palmdale and the retention of the McDonnell Douglas Long Beach plant (1996/97).

TECHNOLOGY DEVELOPMENT PROGRAMS. A variety of government programs encourage the development of new technologies. For example:

University-Industry Technology Centers. There are several federal programs that encourage the establishment and support of such centers, such as the National Science Foundation's Engineering Research Centers and NASA's Centers for the Commercial Development of Space. A university-industry technology center usually involves at least one university and multiple companies. It can also include technology centers within universities, or centers managed by third parties closely related to the university through organizational links (for instance board seats) or by sponsoring of university research. Third parties can be not-for-profit organizations or independent contracted management organizations.

State centers give priority to enhancing a state's capability in a given industrial segment, typically in an emerging technology area such as space commercialization or intelligent transportation systems. The centers provide research and services to companies in the state. Some centers help companies in solving some specific technical problem, while others emphasize the development of intellectual property. Several states have sponsored trade associations and industrial segment studies to improve recognition of the industry and its technological and commercial resources. Some centers have, in addition to research capabilities, industrial extension or program applications that focus on the improvement of production processes. For example, some centers sponsor programs for injection molders, or wood products manufacturers.

The *Virginia Space Development Consortium* is an example of a university-industry technology center focused on aerospace activities. This consortium undertakes research in the following areas: small satellites, satellite communications, remote sensing and environmental monitoring, materials sciences and micro-gravity, space infrastructure and logistics, and space-related business issues. Member companies pool funds to support Research and Development (R&D) and demonstration projects at member universities. In addition to contributions from foundations and government agencies, this program receives funds and administrative support from the *Virginia's Center for Innovative Technology (CIT).*

CIT was created by the Virginia legislature as a nonprofit corporation to foster the development and growth of technology-based business in Virginia. CIT invests in research with market potential at Virginia's state universities, assists in commercializing that research, and helps in the creation and support of technology companies. It provides a variety of programs and services, including manufacturing assistance consultation, funds innovation centers, and a variety of aerospace-related programs. A 15-member board of directors, which include university presidents, the Secretary of Education, the Secretary of Commerce and Trade, and the director of the State Council of Higher Education for Virginia governs CIT. The governor appoints the other members. CIT is funded biennially as a separate line item in the state's budget. Total state funding for the fiscal year 1998 was $10.3 million.

In addition to university-industry technology centers, there are university-industry research partnerships. States participate in these programs granting research funds. The *Virginia CIT Space Fund* provides financing for company-sponsored projects at the university. All funds flow to the university. Two grants totaling almost $50,000 in state funds were financed during the 1998/99-fiscal year.

Government-industry consortia are similar to university-industry centers in organization and objectives; however, in this type of organization the universities are not central participants.

Given California's size and the strength of its universities, industrial technology, and federal laboratories, there are numerous technology activities in the state, with hundreds of university-based centers and numerous local resources for aerospace activities. Aerospace representatives indicate that this is one of the areas where the state has a competitive advantage over other states.[10]

EQUIPMENT AND FACILITY ACCESS PROGRAMS. These programs serve companies by providing low-cost access to expensive and complex equipment and facilities. Their objective is to help industries, especially small businesses, use state-of-the-art facilities that might otherwise be beyond their reach. For instance, they may provide access to high cost equipment, equipment that requires staff competence, expert staff, and training to companies. Colorado, Maryland, North Carolina, and Pennsylvania have this type of program.

PROGRAMS THAT ENHANCE COMPETITIVENESS OF INDUSTRY SUPPLIERS. Programs that encourage the development of new technologies (technology development programs) and other industry-support programs are all enhancing the competitiveness of the aerospace industry. For example, in addition to fostering technological innovation, Virginia's Center for Innovative Technology (CIT) develops and nurtures space commercialization, general aviation, intelligent transportation systems, and related infrastructure, through its Aerospace and Transportation Program. Projects include technology commercialization and demonstration of the effectiveness of improved general aviation approaches at selected Virginia airports.

There is also a variety of networks of collaborating small companies established to help a region's key industrial segments increase their competitiveness through the synergy of company capabilities. The implementation of this type of initiative may occur through voluntary contractor programs, government sponsored pilot programs, and through contractual incentives such as fees. Some examples of aerospace industrial networks are:

- ***Lean Aerospace Initiative.*** This initiative is a collaborative effort between the U.S. Air Force and its partners within government, 19 aerospace corporations, labor, and the Massachusetts Institute of Technology. Lean means shorter production cycles, increased capacity, fast response, less time, smaller inventories, less management, etc. Intended results are reduced cost and production cycle time for military aircraft throughout the entire production chain, while continuing to improve product performance. This kind of program is important since the aerospace industry is facing issues such as increasingly complex systems, rising costs, lengthening development times, a shrinking industrial base, and declining budgets.

  In August 1998, The California Manufacturing Technology Center (CMTC) started a pilot lean aerospace initiative program in California. CMTC is a state and federally funded program for helping small and medium-sized manufacturing companies to increase sales, reduce costs, shrink inventories, reduce scrap and rework, and increase profits. This organization provides technical assistance and counseling in various areas. They have technology partners throughout the state including a network of manufacturing technology centers and 13 centers for applied competitive technology. This organization needs more funding to expand its activities. A large proportion of CMTC clients are aerospace suppliers and sub-contractors.

  The implementation of lean manufacturing practices that increase the efficiency and speed of production of California aerospace products will improve the capacity of the state to respond quickly to changes in demand. This is not only important for the competitiveness of the state industry, but for national security in the case of an international conflict.[11]

- ***Technology Coast Manufacturing and Engineering Network ("Tec-MEN," Florida).*** This network was started in 1989 to bring together defense-dependent firms in Okaloosa County, Florida, to cope with the downsizing of the U.S. Military. This non-profit network has 35 member firms and focuses on joint marketing, joint purchasing, sharing of idle assets, subcontracting opportunities, contract teaming, and joint product and market development. The network holds regular meetings featuring speakers on selected areas of interest.

- ***Agile Web Inc.*** This Pennsylvania program was started by the Ben Franklin Technology Center and financed by the state, industry, and the federal government. Agile Web, Inc. is a Pennsylvania business corporation, privately held by its member company shareholders. Once this corporation becomes fully

operational and financially self-sufficient, annual appropriations from the Pennsylvania Department of Commerce and federal funds will be stopped. The objective of this program is to create a new marketplace for manufacturing, linking together manufacturers and fabrication shops. The web provides an opportunity for small, specialized design and manufacturing companies to compete for larger, multi-phase contracts that would otherwise be out of reach for each one individually.

A closely related program in California is the Program for Regional Improvement Services for Small Manufacturers (PRISSM) managed by Los Angeles Regional Technology Alliance. It provides manufacturing assessment services to systematically evaluate companies' current practices against world class business and manufacturing techniques. Benefits to companies include productivity improvement, improved plant layout and production flow, reduced material handling costs, and shorter product lead times.

INDUSTRIAL PROBLEM SOLVING. These are programs that provide assistance to companies. This kind of program does not focus on creating new technology, but on seeing that the most appropriate technology is adopted by target segments of the industry (for instance, small manufacturers) as a means to increase their competitiveness. Universities or state government generally operate these programs by sending qualified personnel to interact with small and medium-sized manufacturers. These programs may also provide grants to help manufacturers.

Examples of industrial problem-solving programs are technology extension/deployment programs. California examples of technology extension/deployment programs are the California Manufacturing Excellence Programs and the Centers for Applied Competitive Technology. Among California Manufacturing Excellence programs are the California Manufacturing Technology Center (CMTC), the Corporation for Manufacturing Excellence (MANEX), and the San Diego Manufacturing Extension Center (SANMEC). The Centers for Applied Competitive Technology, in partnership with the manufacturing centers such as CMTC, provide customized training to companies working with these centers.

INCUBATORS. Incubators offer business services to start-up companies, such as shared facilities and low-cost office and laboratory space, for a specified period (generally three years). Incubators also foster a cooperative environment between clients and mentor relationships between start-ups and established companies. Many cooperative technology incubators are affiliated with universities or other sources of innovation, such as federal laboratories or corporate innovation centers. An example of this kind of program tailored to the needs of aerospace firms is the Virginia Space Business Incubator. Housed at CIT (Virginia's Center for Innovative Technology) headquarters, this incubator provides office space, resources, and technical assistance to new aerospace companies.

TECHNOLOGY AND BUSINESS FINANCING. Most states, including California, provide some type of financial assistance to the industry at various business stages of

development. Examples are industrial development bonds, pollution control financing, loan guarantees, export finance, and loans for hazardous waste reduction and recycling. Most of these programs are oriented to help small and medium-sized businesses. Interactive databases or electronic networks to facilitate financing have also been established in various states. These networks match entrepreneurs requiring capital with organizations or private industries seeking investment opportunities.

JOB TRAINING. All states offer some kind of state-supported job training program oriented to improve the skills of the labor force. These programs provide grants and other financial assistance to businesses for entry-level skills training as well as skills upgrade training for new, existing and displaced workers. Criteria to qualify for these programs vary by state. The Employment Training Panel (ETP) job training program could be redesigned and used effectively to update the skills of the labor force to the new needs of the industry. The fundamental question is how can California assure the availability of a workforce prepared for high-value added manufacturing.

ARE STATE BUSINESS INCENTIVES EFFECTIVE?

The long-term and bottom-line effectiveness of incentive programs is difficult to quantify. States are secretive about specific economic development deals, and the variety of deals and state programs makes it difficult to draw any comparison between them.

Advocates of tax and business incentives believe that state and local policies can lower the cost of doing business and therefore raise profits. Firms may migrate for the purpose of significantly reducing costs. Since corporate income, sales, and property tax incentives directly affect business profit, they cannot be ignored in decisions on business location. Supporters of tax incentives see these policies as a form of financing job creation by attracting businesses.

However, there is evidence that suggests that government incentives traditionally have a secondary role in firms' decisions to locate or expand. One major reason is that most state policies are based on tax incentives, and state taxes represent less than one-half of one percent of the cost of doing business. If state taxes and incentives were large, we could expect profits to be larger in the low-cost states. However, because state and local business tax burdens are small, after-tax rates of profit do not vary significantly by state.[12]

A variety of studies on firms' decisions on plant location show that the cost and quality of labor, proximity to markets for input and output, access to raw materials needed for production, infrastructure, quality of life, utility costs, and the state's political business support are more important than taxes. A Deloitte and Touche survey found that state incentives seem to be less important than many other factors, ranking 14th out of 17 in location-deciding factors. Both surveys found that factors such as a highly qualified workforce, infrastructure, and general quality of life were more important than state incentives.

Opponents to business incentives feel that these policies provide advantages to large firms and shelter inefficient businesses creating unhealthy economic activities. According to them, incentives raise questions of inequity by rewarding certain target firms or economic sectors more than others. Furthermore, insufficient tax revenues may eventually lead to reduction in quantity and quality of public services, a factor that may drive businesses away.

Another important issue is that generally it is the corporate headquarters rather than the division or plant that pays state taxes. In this case, disadvantages from taxes or advantages created by tax relief do not necessarily apply directly to the business unit that would move or stay.[13]

Overall, tax cost reductions together with political support may still make a difference in some investment strategies, especially for larger projects and when all other conditions are fairly similar. Political support is very important to ensure funding for contracts.

This is very important for the defense-related aerospace sector. According to a representative of the aerospace industry, businesses look at the totality of a state's position on public policy issues rather than on a particular policy when deciding their location sites. They look for an environment that helps employers maintain and increase their competitiveness and respond quickly to the industry's needs.[14]

SUGGESTED POLICY OPTIONS TO ENCOURAGE AEROSPACE ACTIVITIES IN CALIFORNIA

- Policy makers could consider explicitly recognizing the importance of aerospace in California economy, including aerospace and defense on the list of key strategic industries for the development of the state. The economic strategy released by the California's Economic Strategy Panel of 1996 did not list this industry as a key sector for California's future.

- The state may also consider the development of an economic strategy for the aerospace sector. This plan should identify high growth, high-tech activities and programs and target its development efforts on these key aerospace industrial sectors. Part of the strategy may be the redirection of resources from programs serving sectors that have less growth potential to others with high future growth potential. However, this strategy should take into account that profitable production programs finance technology activities within an industry. When production activities are siphoned off to other states, technology follows. In this sense, technology may not stand alone and independent.

- The state may consider forming a task force to suggest policy actions to promote the development of aerospace activities in California. This task force could include federal, state, and local public policy leaders, representatives from various segments of the aerospace industry, labor representatives, and representatives from economic development organizations. One of the activities of this effort could be providing information to and soliciting the support of the Congressional delegation on issues of importance for the retention and attraction of aerospace activities in California. It is important to gain the attention of the congressional delegation to act as a single voice to represent the interest of the industry at the federal level in the negotiation of contracts and other issues that affect California aerospace.

- The Legislature may consider a redefinition of current tax credits, research tax credits, and other financial incentives for manufacturing in general and aerospace in particular, in a way to assure that these policies actually benefit the state. New policies or incentives also need to be designed carefully so that they actually provide the benefits they intend to achieve. In the case of multinational or multi-state businesses that have branches or plants in the state, tax benefits accrued to California plants are written off the balance sheet of the whole corporation rather than written off the California plant's balance sheet. In this instance, the California tax credit decreases the whole company's cost of doing business rather than the California plant's cost of doing business. If the purpose is cutting costs of projects and programs carried out in California, these policies do not accomplish their objective because the effect for the California plants is very small.

Tax incentives such as research and development tax credits, investment credits, etc., should be designed to reduce the cost of doing business in the state. For instance, tax credits may be directed to decrease the cost of certain industrial activities and programs as long as they are developed in California. In the case of defense contracts, specific tax credits could be designed to decrease the cost of selected projects, of economic significance for the state.

This point can be illustrated with the following example. An aerospace company that is a $27 billion a year corporation, has a $1 billion operation plant in California. Let's assume that the state grants a $10 million tax credit to the company. This tax credit will be deducted from the multi-state company's balance sheet. In this case, the benefit of the tax credit will be spread through the whole company. The benefit for California will amount to a reduction of $370,000 from the costs incurred in the California plant (1/27 of the $10 million). When bidding for federal defense contracts, a plant has to bid lower than the competition since the federal government selects those contracts with the lowest costs. When the California plant negotiates contracts, it can write off from overhead costs the benefits of the state tax credit. However, the benefits accrued to California will only be $370,000 rather than the $10 million spent by the California government. This is why direct tax credits such as the Joint-Strike-Fighter-tax credit are more effective. Each dollar granted by the state will lower the cost of the specific contract that will be carried out in the state.

- Policy makers could consider introducing tax incentives for job creation in the aerospace industry. Currently, Senators Figueroa, Rainey, and Solis have introduced SB 495. This bill would provide $1,000 tax credit for each new employee engaged in activities related to space vehicles and parts, and space satellites and equipment. The bill would require that qualified employees cannot include people previously employed by the taxpayer within the past year. The credit would apply for the first three years of qualified new employees' employment. The credit would sunset in 2007 and it would require the California Research Bureau to report to the Legislature by January 2005, on usage of the credit. This policy will be very beneficial for the smaller companies of the industry.

- Policy makers could consider increasing the amount of tax credit for research and development in aerospace. Thresholds for research and development expenses (base amounts) have been set during a period when the aerospace industry was booming. These thresholds could be too high for the current reality of the California aerospace industry.

  Federal law provides for a research tax credit equal to 20 percent of the amount by which a taxpayer's qualified research expenditures for a taxable year exceed its "base amount" for that year. In addition, California provides a research tax credit equal to 11 percent of the amount by which a taxpayer's qualified research expenditures exceed its base amount for that year. Federal and state law also

provide for an alternative research expense credit that applies to start up and other companies that do not fare well under the formula used for the research credit. These companies may claim the alternative credit instead of the regular research credit for the same qualified research expenditures. Assembly member Nakano has currently introduced AB 465, a bill that would raise the state alternative credit from 80 percent of the federal amount (as it had been established last year), to 100 percent.

- Policy makers could consider supporting the development of programs that enhance the skills of California's workforce to meet the needs of high technology industries, such as aerospace. These programs can be developed through partnerships between education providers (K-12, community colleges and universities) and the industry. The infrastructure and expertise for these programs are already in place; however, strategic linkages between industry and university are missing.

  For example, aerospace firms need to train their employees in various areas, such as protection of classified information, compliance with government regulations, and some specific computer programs. Aerospace employers also need to be certified to perform certain jobs. To cite an instance, employees working in the final assembly of aircraft need to be certified for aircraft safety. Furthermore, government contracts establish the qualifications on the characteristics of a given aircraft. These qualification requirements are unique to each contract and require specific training for the employees involved in the project. These training requirements are costly. The state could underwrite these costs by providing funding to colleges to include in their curriculum the training needed by the aerospace activities that are taking place in California.

- Policy makers in California could consider the establishment of special incentive grants to small aerospace firms that need to upgrade the skills of current employees. Such a program could target the training needs of workers of rapidly growing firms or emerging technologies, such as commercial space activities. The employer could design the customized training by working with private or public education providers. Grants could be subject to fund-matching requirements by interested employers.

- The state may consider the evaluation of the current enterprise zone program and its impact for aerospace firms. The state may also consider the creation of an aerospace enterprise zone program tailored to the aerospace sector needs, where incentives are not necessarily tied up to geographic locations, but to programs or activities with high growth potential.

- A forum for communication between the industry and policy makers could be needed in California. The state may consider promoting and supporting industry-government partnerships for the strategic development of various segments of the aerospace industry. An example of this kind of effort in the commercial space

sector is the California Space and Technology Alliance. An effort that expands this type of effort to other aspects of the aerospace industry could be beneficial. This type of forum probably requires financial support from the state.

- The state may consider expanding, financing and implementing industrial networks and interactive databases to disseminate information and promote collaboration among California aerospace firms to create clusters of manufacturers, finance practices, provide data on venture capital, and pool human and capital resources. This kind of effort can be especially important for small suppliers and sub-contractors.

- The state may consider evaluating the performance of the California Manufacturing Excellence Program and the Centers for Applied Competitive Technology and the potential expansion of their technology extension/deployment programs.

- The state may consider expanding its reach in the provision of venture capital for aerospace-related emerging technologies by:

    - Expanding the existing vehicles that provide risk capital and financial assistance to technology companies, and small aerospace suppliers and sub-contractors.
    - Providing funds to community-based investment funds.
    - Launching and supporting electronic networks linking investors to businesses.
    - Providing tax incentives for investors that invest in aerospace start-ups or targeted aerospace areas.

  The dissemination of information on venture capital sources to firms, as well as on firms' capital needs to institutional investors is very important for the economic development of the state. The state may consider the sponsoring, creation, and expansion of this type of network throughout the state.

- Policy initiatives that increase communication between California and federal agencies on issues/legislation of interest to the industry and the economic development of the state would help to provide a friendly environment for the aerospace sector. For example, California could consider advocating for a complete rewrite of the federal commercial Space Launch Act to recognize and address the current needs of the space industry. An example of one area that could be revised is the prohibition of space launches over land. In the past, the process of launching vehicles involved several-stage vehicles. To prevent an errant rocket from heading to a populated area, the implementation of space launching was restricted to over the sea. With the current techniques such as fully reusable single stage-to-orbit vehicles like VentureStar (X-33), the reliability of space transportation has improved, removing many of the safety considerations

related to launching. Launching over the sea restricts the direction of the launching to the West and South. The possibility of launching over land would allow launches in other directions. This would increase the competitiveness of California as a launch site for satellite alternative positioning.

ENDNOTES

[1] Pennsylvania ranked first. (Testimony during Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries held on May 18, 1999).

[2] Testimony of Mr. Tal Finney, Governor's Office, during Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries, held on May 18, 1999.

[3] The International Tenant Representative Alliance (ITRA) is an association of real estate negotiators that, among other services, arrange for office expansion or relocation. Business executives consulted in a recent ITRA survey indicated a variety of factors that determine their plant relocation decisions. Among these factors they mentioned executive lifestyle. More than half of the business executives consulted in the ITRA survey indicated that their relocation decisions were not policy-incentive driven. According to this survey, companies set their relocation decisions based on quality and cost of labor, transportation network, proximity to customers, facility cost and quality, utility infrastructure, and executive lifestyle. Area Development, p. 31. January 1999.

[4] For example, testimony of industry representatives provided on April 9, 1999 in Hearing on "Past, Present, and Future of California's Aerospace Industry," held in the City of Torrance.

[5] Testimony of Mr. Tal Finney, Governor's Office, during Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries, held on May 18, 1999.

[6] The Growth Strategies Organization, Inc. (GSO) is a firm located in Colorado. GSO publishes newsletters, conducts surveys, and provides consulting services to local and state economic development organizations.

[7] According to the testimony of some witnesses in Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries, held on May 18, 1999.

[8] See State Science and Technology Institute. "State Research and Development Tax Incentives." May 1977, Ohio.

[9] Suggested by the Mayor of the City of Palmdale in Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries held on May 18, 1999.

[10] For example, this was indicated by various witnesses during Hearing of the Senate Select Committee on Defense Conversion, Retention and Space Flight Industries, held on May 18, 1999.

[11] If accounts of the dwindling supply of cruise missiles and the scarcity of spare parts in the recent air attack on Kosovo are true, it may indicate that inventories are too low or that a faster way of producing these weapons is needed. The implementation of an initiative that increases the speed of production of aerospace products may help to solve this problem. Since California produces a large share of missiles and related products, to have a program like this in place may be especially important to the state.

[12] Robert G. Lynch. Do State & Local Tax Incentives Work? Economic Policy Institute. Washington D.C. 1996.

[13] Telephone conversation with Mr. John Bass, Antelope Valley Aerospace Alliance, and Director of Government Relationships, Lockheed Martin.

[14] "We like to look at the totality of a state's position on public policy issues and make a judgement as to whether policy helps the state by helping employers reach their full potential. Would we establish a plant in a state simply because it had a rational product-liability law or a reasonable workers' comp law? We wouldn't. We look at the totality and the totality should reflect an environment that helps employers maintain or increase their competitiveness." Source: Donn R. Osmon, "State Business Incentives" presented at the 1996 CSG annual meeting, December 10, 1996, Cleveland, Ohio.

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APPENDIX

SUMMARY OF STATE INCENTIVES PROVIDED BY STATES WITH A SIGNIFICANT SHARE OF U.S. AEROSPACE EMPLOYMENT.

STATE	POLICIES
CALIFORNIA	Manufacturing Equipment Credit. All companies operating in California are eligible for a six percent manufacturer's credit. The credit can be claimed against the bank and corporation tax, or the alternative minimum tax. Sales tax exemption is available as an option to the investment tax credit. Research and Development Tax Credit. Companies receive a credit of eight percent for qualified research expenses, and 12 percent for basic research payments paid in cash to an outside company. Enterprise Zone Program. Companies locating in one of the 36 designated enterprise zones can take advantage of state and local incentives and programs not available to businesses outside the enterprise zone. Local Agency Military Base Recovery Act. Provides for designated communities to offer enterprise zone-based tax incentives to businesses that locate in closed military bases. Job Training. The Employment Training Panel assists businesses in acquiring and retaining a highly skilled workforce to increase competitiveness and productivity. Participant employees pay a small contribution and can utilize the reimbursements provided by the program to offset the costs of customized training for their employees. Reimbursements are made to the company for each employee who completes training and remains on the job for 90 days.
WASHINGTON	Distressed Area Sales and Use Tax Deferral/Exemptions Program. Under this program a waiver of sales and use tax may be granted for manufacturing, research and development, or computer-related businesses locating in specific geographical areas. The sales and use taxes are waived when all qualifications are met for a specific time period. One full-time position must be created for every $750,000 of investment. Business and Occupation Job Training Tax Credit. Maximum is $5,000 total credit per year. Credit is for those that are subject to Distressed Area Sales and Use Tax Deferral/Exemptions Program and have provided free training to their employees. Distressed Area Business and Occupation Tax Credit Program. A $2,000 credit against the business and occupation tax for each new employment position created by certain businesses located in distressed areas. High Technology Business and Occupation Tax Credit. An annual credit of up to $2 million is allowed for businesses that perform research and development in Washington, in specified high technology categories, and meet the minimum expense requirements.

WASHINGTON (cont.)	Job Training. The Washington State Job Skills Program (JSP) provides grants for customized training projects and requires at least 50 percent matching support from industry.
CONNECTICUT	Machinery and Equipment Tax Credit. This is a five or ten percent credit based upon expenditures for machinery and equipment acquired for and installed in Connecticut. Electronic Data Processing Equipment Credit. This provides a 100 percent credit for property tax paid on electronic data processing equipment. Enterprise Zone or Entertainment District Credit. Allows a business up to 50 percent of its allocable tax as a credit for operating a facility within a designated enterprise zone or entertainment district. Corporation may claim this credit for 10 years after required certification with the Department of Economic and Community Development. Manufacturing Facility in a High Unemployment Area Credit. A credit may be applied against the portion of the corporation business tax allocable to a manufacturing facility located in a distressed municipality. Research and Experimentation Credit. This tax credit is based on the incremental increase in expenditures for research and experiments conducted in Connecticut. Research and Development Expenses Credit. A credit may be applied against the Corporation Business Tax for the expenses of research and development conducted in Connecticut. Employee Training Credit (to reach 25 percent in 1998). Spending on job training must occur in Connecticut and must exceed the amount expended in the previous year. Apprenticeship Training. A corporation that hires apprentices in the machine tool, plastics and metal trades may apply for a credit of up to $4,800 per apprentice. Employer Assisted Housing Credit. This credit is available for income years beginning on or after Jan. 1, 1994, for money paid to a revolving loan fund for employer assisted housing. Job Training Finance Program. Encourages banks to make loans up to $250,000 to manufacturers to train their production workers. The program provides a grant of either 25 percent of the loan or $25,000 (whichever is the lowest) upon completion of training, which is used to pay the bank loan.
TEXAS	The Texas Enterprise Zone Program offers incentives to new or expanding businesses located in designated areas. Enterprise zone projects are eligible for a refund of state sales or use taxes paid on machinery and equipment, building materials, labor for rehabilitation of existing buildings, and electricity and natural gas purchased for use in the zone. Each project is limited to a maximum refund of $1.25 million, or $250,000 per year over a five-year period. The Smart Jobs Fund provides grants to employers for customized training in emerging and in demand occupations. Large businesses with 100 or more employees and more than $1 million in annual gross receipts can receive up to a maximum of $1,454 per job.

KANSAS	Enterprise zone incentives are based on the location of the facility, the economic sector (manufacturing, non-manufacturing or retail), the capital investment, and the number of jobs created. A sales tax exemption is available on the materials, equipment and services purchased when building, expanding or renovating a business facility. State income tax credits are available for job creation and capital investment. Job Expansion and Investment Tax Credits are available to businesses that are not eligible for enterprise zone credits and that create at least two net jobs. High-performance Incentive Program. Specific incentives extended to firms meeting the qualifications include: 1) a sales tax exemption, 2) a 10 percent investment tax credit against corporate income tax on capital investment exceeding $50,000, 3) a work-force training tax credit of up to $50,000 per annum on training expenditures above 2 percent of total company payroll, 4) potential matching funds for approved private consulting fees, and 5) priority consideration for other state business assistance programs. Tax Credit for Research. The maximum credit is 6.5 percent of an enterprise's annual qualified research and development expenditures. However, only 25 percent of the allowable annual credit may be claimed in any one year. Any remaining credit may be used in 25 percent increments against future income tax obligations, until the credit is exhausted. Job Training. Kansas offers three training programs for customized training and retraining of employees of new and expanding businesses.
MISSOURI	New or Expanded Business Facility Credit. This tax credit can be earned by a new or expanding manufacturing facility, wholesale distribution facility, warehouse facility, research and development facility, mining operation, inter-exchange telecommunications company and other operations as specified. These facilities and operations must create a certain number of jobs. This credit may be used to reduce state business income tax by up to 100 percent for 10 tax years. The Enterprise Zone Act provides incentives to businesses creating two jobs and $100,000 in investments locating in economically distressed areas. Research Credit up to 6.5 percent of the excess of qualified research expenses during the tax year. Job Training. Assists new and expanding businesses in recruiting, screening and training workers.
MASSACHUSETTS	The Economic Development Incentive Program was initiated to stimulate economic development in distressed areas, attract new businesses and encourage existing businesses to expand in Massachusetts. Investment Tax Credit. Businesses certified under the Economic Development Incentive Program are eligible for a five percent investment tax credit. A three percent investment tax credit is also available to any manufacturer or research and development company located in Massachusetts. Research and Development Tax Credit. Any company investing in research and

MASSACHUSETTS (cont.)	development is eligible for a tax credit. Credits of 10 and 15 percent are permanent with a 15-year or indefinite carry-forward provision. Job Training. The Corporation for Business, Work and Learning provides a variety of worker training services including support for defense firms seeking to enter commercial markets and support for firms adding jobs and developing new training methods.
FLORIDA	Qualified Target Industry Tax Refund Program. This program is designed to create high value-added jobs and encourage the growth of corporate headquarters and other targeted high value-added industries. The program provides for a tax refund of up to $5,000 per new job created. Qualified Defense Contractor Tax Refund Program. This program is designed to minimize the negative economic impacts of defense downsizing in Florida. The program provides for a tax refund of up to $5,000 per job created or saved in Florida through: 1) the conversion of defense jobs to civilian production, 2) the acquisition of a new defense contract, 3) the consolidation of a defense contract that results in at least a 25 percent increase in employment, 4) the reuse of certain defense facilities at one of Florida's ports. Florida Enterprise Zone Program provides sales or corporate income tax credits to businesses located within or hiring from enterprise zones. Florida Economic Development Transportation Fund. This fund is available to local governments in need of financial assistance for transportation projects to facilitate economic development. The local government must apply on behalf of a company that is considering an expansion or relocation of facilities and that has an existing or anticipated transportation problem. Enterprise Florida Innovation Partnership aims to increase creation of technology-based companies, expanding the development and use of technologies. Research and Development Technology. "Technology Research Investment Fund" provides funds for commercial product development (as much as 50 percent of research costs for industry projects judged to have commercial value). The Quick Response Training Program is oriented to provide training tailored to companies that produce exportable goods and pay wages above the local or state average wage.
ARIZONA	Businesses located in an enterprise zone established under Arizona law may claim up to $3,000 income tax credit per qualified employment position for net increases in employment of qualified employees. Research and Development Credit. Arizona allows an income tax credit for research and development expenses available beginning with tax year 1993. The maximum allowable credit is $100,000 in the first claim year, $250,000 in the second claim year, $400,000 in the third claim year and $500,000 in each year thereafter. There is a 15-year carry forward for this credit. Defense Contracting Credit. There are two tax credits for qualified defense contractors. Qualified defense contractors may claim a tax credit for net

ARIZONA (cont.)	increases in employment positions under United States Department of Defense contracts and in private commercial employment positions. There is also a tax credit for property taxes paid by a qualified defense contractor. Military Reuse Zone Credit. This credit is for net increases in employment of full-time employees working in a military reuse zone established under Arizona law. The employee must primarily engage in manufacturing, assembling or fabricating aviation or aerospace products. The tax credit for construction materials incorporated into a qualified facility (which began on or after January 1994 and is completed on or before December 31, 1999) is for 5 percent of the cost of the new construction materials used. The Work Force Recruitment and Job Training Grant Program provides grants for short-term customized training for new employees.
GEORGIA	Job tax credits are given to companies depending on the number of jobs created and the counties where they are located. Counties are ranked based on their average unemployment rate, per capital income, number of people in poverty, and average weekly manufacturing wage. There are also additional job-tax credits for businesses in less developed areas. Investment tax credits are also provided to businesses, depending on the county where they are located. Optional investment tax credit can, depending on location, offset up to 90 percent of manufacturer's increased income tax liability following a major expansion. Manufacturing machinery sales tax exemption. Provides for an exemption for the sales and use tax for new machinery and equipment, including overhead materials used by a government defense contractor for DoD or NASA. Electricity sales tax exemption applies to purchased electricity for product manufacturing as long as the total cost of the electricity is at least 50 percent of the total cost of the product. Freeport tax exemption. This exemption offers local communities flexibility in exempting three types of inventory from property exemption: manufacturer's raw materials and goods in process, finished goods held by the original manufacturer, and finished goods held by distributors, wholesalers and manufacturers destined for out-of-state shipments. Corporate income tax reductions. Allows depreciation deductions for machinery, equipment and improvements. It also offers a deduction for operating expenses and interest. Foreign trade zones. There are three foreign trade zones where goods may be imported without formal customs entry, payment of duties or excise taxes. The zones are especially advantageous for manufacturers using both domestic and foreign components to build goods for export. Job Training. Quick Start provides complete training services free of charge to companies opening new facilities or expanding existing operations.

COLORADO	Sales tax exemptions include manufacturing equipment or machine tools, component parts, fuels and electricity, packaging materials, aircraft parts used in general maintenance, and interstate long-distance telephone charges. Investment tax credit for business investments that qualify under the former federal guidelines for an investment tax. Enterprise zone tax credits. Businesses in enterprise zones receive various investment tax credits, new employee tax credits, credits for research and experimental activities, vacant building rehabilitation credits and contributions for various qualifying activities within the zones. The Colorado FIRST and Existing Industries Program offer short-term, fast track job training assistance for qualified employees.
NEW HAMPSHIRE	Tax Credits. A direct dollar-for-dollar credit is offered against any business profits tax liability, for business enterprise tax paid. Capital Investment Tax Credit. Provides for a credit of 10 percent of qualified manufacturing capital expenditures made or incurred during the taxable period. Job Tax Credit. Equal to 15 percent of the cost of New Hampshire jobs. Offers subsidized training to privately owned companies through state technical colleges and institutes.
MARYLAND	Sales and use tax exemptions include sales and equipment, and materials used or consumed in research and development, sales of aircraft, vessels, railroad rolling stock and motor vehicles that will be used principally in the movement of passengers or freight in interstate and foreign commerce, and sales of manufacturing machinery and equipment. Job Creation Tax credit. Income tax credits are granted to qualified businesses that create 60 jobs in a two-year period. Businesses located in enterprise zones are eligible for income tax credits for wages paid to qualified employees in the zones, and property tax credits to new or expanding businesses that meet certain requirements. The Partnership for Workforce Quality provides incentive grants to manufacturing firms for training current employees.
OHIO	Enterprise Zones. Local and state tax incentives are available to businesses that expand or locate in designated areas of Ohio. Incentives include tax reductions on real and personal property and state franchise taxes. Ohio Job Creation Tax Credit. State and municipal tax incentives are available for businesses that expand in or relocate to Ohio. The amount of tax credit can be up to 75 percent for up to 10 years. Businesses must agree to create at least 25 new full-time jobs within three years of operation, with an average wage of at least 150 percent of the current federal minimum wage. Ohio Manufacturing Machinery and Equipment Investment Tax Credit. A nonrefundable corporate franchise or state income tax credit for a manufacturer that purchases new machinery and equipment for production or assembly of a manufactured good.

OHIO (cont.)	Research and Development Sales Tax Exemption. Provides an exemption from the usual state and county sales tax for companies that purchase equipment for research and development activities. Exempt state and county taxes for purchase of machinery and equipment used primarily for research and development. Export Tax Credit. Rewards Ohio companies with a franchise tax credit when they increase exports and their Ohio payroll or capital expenditures. The Ohio Industrial Training Program provides up to 50 percent funding for orientation training for new or current workers, management and other training programs.
ILLINOIS	Corporate income tax credits include a 0.5 percent credit for investment in manufacturing, an additional 0.5 percent credit if employment increases by more than one percent, a 1.6 percent training expense tax credit and a 6.5 percent research and development credit. Sales and use tax exemptions include the purchase of manufacturing machinery (25 percent credit) and replacement parts, computers, and purchase of farm machinery. Businesses in enterprise zone are allowed sales tax exemptions, utility tax exemptions, machinery and equipment sales tax exemptions, investment tax credits, jobs tax credit, interest deduction, and dividend income tax deductions. The Industrial Training Program assists Illinois companies in training new workers or upgrading the skills of existing workers.
PENNSYLVANIA	Exempts from sales and use taxes include property used in research activities for the production of new or improved products, and industrial fuels and raw materials. Job Creation Tax Credit provides a credit against business taxes up to $1,000 per new job to certified companies for increasing employment by 20 or 25 percent new jobs over three years. Enterprise Zone tax credit program allows corporations a 20 percent tax credit or $250,000, whichever is less, on investments to improve buildings or land located in the zones. Job Training. Provides funds for training projects that result in new full-time employment opportunities and significant wage improvements.
NEW JERSEY	The New Jobs Investment Tax Credit is available for investment in new or expanded business facilities that create new jobs in the state. Investment Tax Credits are given to businesses that purchased qualified manufacturing equipment and to businesses that expand employment. Research and Development Tax Credit are given to activities performed in the state. Customized Training Programs provides funding to qualified employers.
ALABAMA	All real and personal property is subject to ad valorem tax unless specifically exempted by law. Alabama law provides that ad valorem tax abatements of up to 10 years may be granted to new and/or expanding businesses. For an expanding industry to qualify, it must invest a minimum of $2 million or 30

ALABAMA (cont.)	percent of the original cost of the facility. Enterprise Zone credits do not exceed $2,500 per new permanent employee hired by businesses located in these zones. Capital Investment Tax Credit provides business tax credit of up to 5 percent of capital cost per year for 20 years to qualified new and expanding companies. The Alabama Industrial Development Training Program provides free job training for companies that meet certain criteria.
NEW YORK	Corporate Franchise Tax credit is available for new capital invested in buildings and/or depreciable tangible personal property used primarily in production by manufacturing, processing, assembling and other activities. Employment Incentive Credit of 1.5 percent to 2.5 percent for the same new capital investment (production facilities and equipment only) is deductible by corporations from the tax payable following the year of the initial investment, as long as certain demands on employment are met. Research and Development Credit. This credit is available against the corporate franchise/income tax at nine percent of the cost of qualified research and development tangible property acquired. The personal income tax research and development credit is seven percent. The state also has economic development zone incentives such as zone investment tax credit, employment incentive credit, zone wages credit and capital credit. Companies that upgrade the skills of current workers or train new employees can receive grants to help with training expenses.
UTAH	Enterprise zones. The state allows companies located in these zones an income tax credit or a corporate franchise tax credit of $750 for each new full-time position or $1,250 for high-paid positions. It also has investment tax credits in plant equipment or other depreciable property. There are also exemptions from sales and use taxes for certain activities within the zones. The Custom Fit Program provides tailored funds and expertise for training to new or expanding companies.
INDIANA	Corporate income tax credits include research expense credit to any corporation entitled to the Federal Research Expense Credit. Businesses located within enterprise zones are eligible for a credit equal to 100 percent of property tax liability on inventory, an exemption from gross income tax on the increase in receipts from the base year and some based on employment tax credits. Financial assistance in the form of a grant for reimbursement of eligible training costs is provided to manufacturing companies (Training 2000).
NEW MEXICO	Investment Tax Credit. New Mexico offers manufacturers a credit of five percent of the value of the equipment and machinery used specifically for manufacturing. Industrial Machinery and Equipment Tax Credit. There is an investment credit against its gross receipts tax or withholding tax for five percent of the value of manufacturing machinery or equipment installed in a new operation.

NEW MEXICO (cont.)	Manufacturers can get a credit for compensating tax (sales tax) paid by applying for an investment tax credit. This state also offers property tax abatement, refunds from in-plant training costs, tax credits for business rehabilitation and other benefits for businesses located within enterprise zones. The In-plant Training Program pays up to 50 percent of employee training costs and wages for an expanding or relocating business for up to a six-month period.
MINNESOTA	Exemptions from the state sales tax include materials used in industrial production processes and capital equipment for new and expanding manufacturers. There is a research and development corporate tax credit for an increase in qualified expenditures for research and development activities. The enterprise zone program provides property tax credit, debt financing on new construction credit, sales tax credit on construction equipment and materials, and job-based tax credits. The Minnesota Job Skills Partnership Board awards grants to training projects designed by educational institutions. Employers make a matching contribution.
LOUISIANA	Enterprise zones. Qualified businesses locating or expanding within these zones are eligible for a one-time tax credit. Aviation and aerospace industries are eligible for a one-time tax credit of $5,000 per new employee hired. In addition, businesses within these zones receive refunds of 4 percent of state sales and use taxes on materials used. The Louisiana Quickstart Training Program intends to provide businesses with a pool of skilled and productive employees through pre-employment training.
NORTH CAROLINA	There is a sale and use tax exemption for ingredients or component parts of manufactured products. There is an investment tax credit of seven percent of the excess value of machinery and equipment placed in service by eligible new or expanding firms. There is also a job creation tax credit for firms with at least five full-time employees. There is also a worker training tax credit. Credits vary by county, according to their level of distress. The research and development tax credit is equal to five percent of the state's apportioned share of the taxpayer's expenditures for research and development. There is a credit of 4.5 percent of tangible personal business property for eligible firms. The Department of Community Colleges Industrial Training Program provides funds through the Community College System for training workers of new and expanding businesses creating at least 12 new jobs.

Source: The Council of State Governments "State Business Incentives: Trends and Options for the Future." 1997.