U.S. Department of Labor

Employment Standards Administration
Office of Federal Contract
Compliance Programs
Washington, D.C. 20210

AUG 7 1996

Mr. Michael Kobold
Post Office Box 11
Bloomfield Hills, MI 48303

Dear Mr. Kobold:

Thank you for your letter. We appreciate your comments regarding affirmative action as it relates to your concern about foreign nationals in specialty occupations under the H-1 visa program.

OFCCP administers three equal employment opportunity programs: Executive Order 11246, as amended (race, color, religion, sex, national origin); Section 503 of the Rehabilitation Act of 1973, as amended (qualified individuals with disabilities); and the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212 (Vietnam era and disabled veterans). These programs require nondiscrimination and affirmative action in employment by Federal contractors and subcontractors. We are enclosing a policy directive which explains the use of goals in the Executive Order program, and a copy of our regulations for your information.

In your letter, you asked why rich, foreign national men on or in the process of applying for H-1 visas are considered minorities for affirmative action purposes. Under our programs foreign nationals would only be counted for goal setting purposes if they fall within the definition of minority as defined in the Equal Employment Opportunity Employer Information Report (EEO-1)--specifically, Blacks, Hispanics, Asians or Pacific Islanders and Native American Indians or Alaskan Natives. Foreign nationals who qualify as minorities under this definition and who have obtained authorization to work from the U.S. Immigration and Naturalization Service are legally entitled to the same rights and protections afforded U.S. citizens employed by Federal contractors. For this reason, Federal contractors are able to consider eligible foreign nationals as minorities for affirmative action purposes under the Executive Order 11246 program. Additionally, under Executive Order 11246, all covered employees are protected against discrimination based on national origin.

Furthermore, under the Immigration and Nationality Act, employers who intend to employ alien workers for a temporary period in professional occupations on H-1 visas must file Labor Condition Applications (LCAs) with the Department stating that they will

offer the appropriate wage rate and working conditions to the alien, that they have notified the bargaining representative or posted notice of their intent to employ alien workers, and that there is no strike or lockout at the place of employment. Further, the employer must make certain documentation available for public examination. Complaints may be filed with any office of the Department's Wage and Hour Division, Employment Standards Administration, alleging a violation of the LCA process. If reasonable cause to believe a violation has been committed is found, the Department will conduct an investigation and, if appropriate, assess penalties.

Because of the Department's administrative responsibilities for aspects of the H-1 visa program, and the Department's mission to safeguard the interests and employment opportunities of U.S. workers, abuses associated with the program are of particular concern to us, and we encourage the public to report any alleged abuse to the appropriate local office of the Wage-Hour Division.

As part of OFCCP's enforcement program, OFCCP normally reviews the contractor's Immigration and Naturalization Service (INS) I-9 Forms. For the desk audit phase of the process, we request that contractors submit a list of all employees hired after November 6, 1986, or since the last inspection of the I-9 forms for (1) all employees, both current and former employees hired within the last three years; and, (2) any former employees hired more than three years ago (but after November 6, 1986) who were terminated within the past year. Copies of I-9 forms must be retained for all current employees hired after November 6, 1986. I-9 forms must be retained from former employees for one year after termination of the employment or for three years after they were hired, whichever is later. The purpose of the retention and inspection of the contractor's I-9 forms is to enable verification that each of the contractor's employees is eligible to work under the regulations of the INS. These employment eligibility verification provisions are mandated by Section 247A(b) of the Immigration Reform and Control Act of 1986.

We have taken the liberty of referring your correspondence to the agency shown below, which has primary jurisdiction in the area of foreign labor certification and may be able to further address

your concerns. You may want to contact that agency directly.

Ms. Flora T. Richardson
Chief, Division of Foreign
Labor Certifications
U.S. Department of Labor
200 Constitution Avenue, N.W., Room N-4456
Washington, D.C. 20010

If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Joe N. Kennedy
Deputy Director

Enclosures

TRANSMITTAL

U.S. DEPARTMENT OF LABOR
Employment Standards Administration
Office of Federal Contract
Compliance Programs

Number: 207	Date: DEC 13 1995	ADM Notice/Other

1. SUBJECT: Numerical Goals under Executive Order 11246.

2. PURPOSE: To make minor clarifications in the Notice issued on August 2, 1995, on Numerical Goals under Executive Order 11246.

3. BACKGROUND: On August 2, 1995, the Office of Federal Contract Compliance Programs issued a notice, signed on July 26, 1995, by Deputy Assistant Secretary Shirley J. Wilcher, to reaffirm its longstanding policy that affirmative action program goals under Executive Order 11246 are to be used as a tool to aid in breaking down barriers to equal employment opportunity for women and minorities without impinging upon the rights and expectations of other members of the workforce. Affirmative action program goals are not to be used as quotas which must be achieved through race-based and gender-based preferences.

   Upon issuance of the August 2 Notice questions were raised about whether parts of Sections 4a, 4c and 5 of the Notice reflected a change in OFCCP policy. This revised Notice is being issued to reaffirm that OFCCP's longstanding policy on the appropriate uses of numerical goals in Executive Order 11246 affirmative action programs remains unchanged. Accordingly, Sections 4a, 4c and 5 have been clarified to avoid misunderstanding.

4. OBSOLETE DATA: ADM Notice/Other issued on August 2, 1995, by Transmittal 206.

5. FILING INSTRUCTIONS:

   Holders of ADM and LEG Binders only: File at the end of the "Other" Tab in your Administrative Practices Binder. Remove ADM Notice/Other, issued on August 2, 1995.

   District and Area Offices EOSs and EOAs only: File behind the tab for ADM Directives in your FCCM Binder. Remove ADM Notice/Other, issued on August 2, 1995.

6. DISTRIBUTION: A, B, C electronically

7. EXPIRATION DATE: None

December 13, 1995

SHIRLEY J. WILCHER
Deputy Assistant Secretary for
Federal Contract Compliance

Date

1. SUBJECT: Numerical Goals under Executive Order 11246.

2. PURPOSE: To reaffirm OFCCP's policy on the use of affirmative action program goals.

3. BACKGROUND: The principles and concepts underlying the current blueprint for affirmative action programs under Executive Order 11246 were originally conceived and successfully implemented in 1961 by Plans for Progress (PfP), a group of 300 leading corporations committed to achieving equal employment opportunity through voluntary affirmative action. Each of these companies adopted a "plan for progress" for the corporation as a whole and for each of its individual establishments. These plans for progress, as a management tool for achieving equal employment opportunity, were the precursors to today's affirmative action programs.

On July 1, 1969, after having successfully tested this model over an eight-year period, PfP merged with the National Alliance of Business, and turned its focus to youth employment. Seven months later, on February 7, 1970, the Office of Federal Contract Compliance incorporated PfP's Guidelines on Affirmative Action as the centerpiece of its affirmative action program regulations applicable to the larger Federal non-construction contractors. These regulations -- 41 CFR Part 60-2 -- and their counterpart for construction industry contractors -- 41 CFR Part 60-4 -- have withstood the test of time as reasonable and successful tools that aid in breaking down barriers to equal employment opportunity for women and minorities without impinging upon the rights and expectations of other members of the workforce.

At the time numerical goals were incorporated into the written affirmative action program regulations, the Office of Federal Contract Compliance recognized that some might misunderstand goals to be quotas which must be achieved through race-based and gender-based preferences. Accordingly, the Office of Federal Contract Compliance squarely addressed these issues in the affirmative action program regulations.

To further clarify and maintain the proper focus of affirmative action in the contract compliance program, OFCCP has periodically issued supplemental guidance and instructions explaining the difference between permissible numerical goals, on the one hand, and unlawful preferences and quotas, on the other.

The earliest and most comprehensive of these instructions was issued in 1973 as a policy statement which also was signed by the Department of Justice, the then United States Civil Service Commission, and the Equal Employment Opportunity Commission.

Despite these longstanding efforts by the Office of Federal Contract Compliance Programs to ensure that numerical objectives under the Executive Order are not confused with unlawful preferences and quotas, criticism that they involve such preferences emerges periodically. This Administrative Notice seeks to help address that criticism and reaffirm the characteristics of affirmative action program goals under the Executive Order.

4. POLICY REAFFIRMATION:

a. The Essence of Affirmative Action Programs: Contractor Self-Evaluation and Self-Correction.

Affirmative action programs (AAPs), as authorized by regulations implementing Executive Order 11246, consist essentially of procedures by which Federal contractors analyze their workforce and evaluate their employment practices for the purpose of identifying and correcting any obstacles to equal employment opportunity. Where the need for corrective action is revealed, the AAP includes outreach and other steps that are precisely tailored to eliminate the barriers disclosed, and numerical goals to measure progress toward achieving that result.

b. Prohibition against Quotas and Preferential Treatment.

The numerical goals component of affirmative action programs is not designed to be, nor may it properly or lawfully be interpreted as, permitting unlawful preferential treatment and quotas with respect to persons of any race, color, religion, sex or national origin. The regulations at 41 CFR 60-2.12(e), 60-2.15 and 60-2.30, specifically prohibit discrimination and the use of goals as quotas.

c. Goals Are Neither Set-asides Nor a Device to Achieve Proportional Representation or Equal Results.

Numerical goals do not create set-asides for specific groups, nor are they designed to achieve proportional representation or equal results. Rather, the goal-setting process in affirmative action planning is used to target and measure the effectiveness of affirmative action efforts to eradicate or prevent barriers to equal employment opportunity. Moreover, the numerical bench marks are realistically established based on the availability of qualified applicants in the job market or qualified candidates in the employer's work force.

d. There is No Requirement, Under the Affirmative Action Component, to Fill any Position on the Basis of Race or Sex.

Goals under Executive Order 11246 do not require that any specific position be filled by a person of a particular race, gender or ethnicity, even where the phenomena of jobs traditionally segregated by race or sex remain substantially in tact. Instead, the requirement is to engage in outreach and other efforts to broaden the pool of qualified candidates to include minorities and women.

e. The Use of Numerical Goals is Consistent with Principles of Merit.

In seeking to achieve its goals, an employer is never required to: 1) hire a person who does not have the qualifications needed to perform the job successfully; 2) hire an unqualified person in preference to another applicant who is qualified; or, 3) hire a less qualified person in preference to a more qualified person. Unlike preferences and quotas, numerical goals recognize that persons are to be judged on individual ability, and are, therefore, consistent with the principles of merit hiring and promotion.

f. Goals May Not Be Treated as a Ceiling or a Floor.

The Executive Order does not require that contractors treat goals as either a ceiling or a floor for the employment of particular groups. Goals establish neither a minimum nor a maximum number of members of a group which must be employed. Either use of a numerical goal would be an impermissible quota.

g. Compliance is Measured by Good Faith Effort.

A contractor's compliance is measured by whether it has made good faith efforts to meet its goals. Failure to meet goals is not a violation of the Executive Order. Therefore, a contractor that has not met its goals will be found in compliance if it has made good faith efforts.

5. IMPLEMENTATION: Whenever evidence is revealed to OFCCP that a contractor has implemented quotas or preferences which are unlawful, it is OFCCP's policy and practice to take quick action to correct the matter, and in the same manner as if the contractor has violated the Executive Order in a different way. This practice will continue.

Compliance officers are instructed to re-emphasize the agency's policy and practice on the use of affirmative action program goals in compliance reviews, technical assistance and other interactions with Federal contractors for the purpose of achieving compliance with the requirements of Executive Order 11246.

Each OFCCP Regional, District and Area Office will be furnished with an information kit containing information of relevance to the Federal EEO contract compliance program. The kit will be made available to members of the press and the general public who wish to be informed about affirmative action and nondiscrimination under Executive Order 11246 and other EEO laws administered by the Office of Federal Contract Compliance Programs.

6. FILING INSTRUCTIONS:

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7. DISTRIBUTION: A, B, C, electronically

8. OBSOLETE DATA: None

9. EXPIRATION DATE: None

DEC 13 1995

SHIRLEY J. WILCHER DATE
Deputy Assistant Secretary for
Federal Contract Compliance

WSJ 2000 (date?)

Black Coalition Frets Over Influx of Skilled Foreigners

Congress Faces Lobby Effort to Block Measures Aimed at Nearly Doubling Special Visas

By Marjorie Valbrun
Staff Reporter of The Wall Street Journal

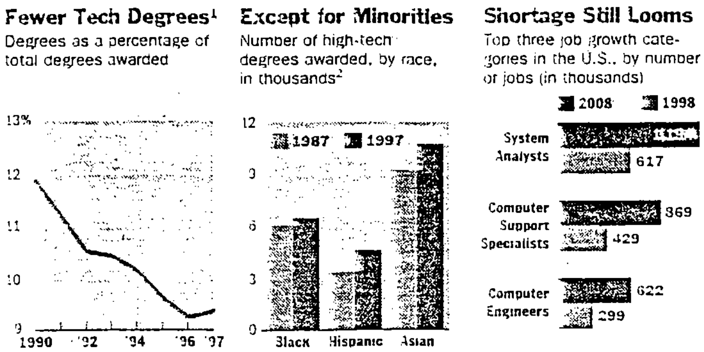
Black engineers, scientists and computer specialists are opening a new front in the battle over skilled foreign workers.

The black professionals charge that politicians of both parties are scrambling to satisfy high-tech industry demands for more skilled foreigners, while minority Americans are being excluded from well-paying, mid- and high-level technical and scientific jobs.

"There are already far more qualified Americans to fill existing high-tech jobs than we need, many of them African-American and other minorities," the Coalition for Fair Employment in Silicon Valley, a group claiming to represent thousands of minority professionals, said in a recent full-page advertisement in Roll Call, a Washington, D.C., newspaper closely read on Capitol Hill.

The group, made up of black engineers, physicists and others, is lobbying against pending bills that would raise the annual limit on so-called H-1B visas, under which high-tech workers from India, China and elsewhere are streaming into the U.S. Democrats and Republicans have proposed competing bills that would nearly double the current annual limit of 115,000 H-1B visas.

Have High-Tech Firms Overlooked Minorities?



[1]Engineering, engineering technology, computer science, business information systems, mathematics and physics degrees ranging from associate degrees to Ph.D.s

[2]Computer science, engineering and mathematics undergraduate degrees

Source: American Electronics Association

Low U.S. Recruitment

But the coalition contends that the visa program takes jobs from Americans and reduces overall pay levels by allowing employers to hire foreigners willing to work for lower wages. Moreover, it says, high-tech companies and government-funded research labs rarely recruit potential employees at conferences and conventions of black professional organizations, or at historically black colleges.

"It's disturbing to me when I see the universities and corporations manipulating the immigration laws in order to facilitate the importation of low-cost foreign tech workers and not expend the same resources to develop scientific talent in the African-American and Hispanic communities," says Keith Jackson, one of two black physicists at the Lawrence Berkeley National Laboratories, an arm of the Energy Department in Berkeley, Calif.

The black coalition isn't likely to derail the H-1B legislation altogether. But the group's lobbying—along with that of other groups, including the National Urban League—has increased the chances that any boost in visas will come with tougher rules requiring high-tech companies to recruit and train more American minorities.

The Urban League, a civil-rights organization based in New York, called on Congress last week to hold off on expanding the H-1B program until the National Academy of Science completes a study of the employment needs of the high-tech and information-technology sectors.

Complaints From Engineers

Minority groups aren't the only ones complaining about H-1B workers. The U.S. chapter of the Institute of Electrical and Electronics Engineers says many of its older members can't find work, either. That's led the group to join the Immigration Reform Coalition, a group of American workers who hope to restrict the number of temporary skilled-worker visas issued each year.

Industry officials respond that they are eager to hire Americans, but that the supply of Americans with scientific or technical degrees isn't large enough to fill all the job vacancies and the number of minorities with such skills remains relatively small.

But the coalition points to a number of federal studies which seem to back its claim. Last year, the coalition took its allegations about Silicon Valley to the Labor Department, which intensified a review it had been conducting of high-tech companies' hiring practices. Out of 55 companies the agency has looked at since 1997, it found that 10 discriminated against minorities or women and another 21 lacked minority-recruitment plans required because they are federal contractors.

> *The coalition says the visa program reduces pay levels by allowing employers to hire foreigners willing to work for lower wages.*

In one case, Diamond Multi-Media Systems Inc., San Jose, Calif., was ordered to pay a total of $213,200, in back pay and other civil remedies for improperly denying low-level technical jobs to five Hispanic applicants, whom the Labor Department concluded were qualified for the positions. Paul Crossley, a spokesman for S3 Inc., a digital media company in Santa Clara, Calif., that bought Diamond last fall, says, "Any problem that existed has been solved as we integrated Diamond into our company's culture, which is greatly diversified and integrated."

Separately, the U.S. Equal Employment Opportunity Commission is also examining labor practices in Silicon Valley. "There's been a lot of discussion about this issue and the concern that there is discrimination and not full usage of minority, female and older workers," says Paul Igasaki, vice chairman of the commission.

Many industry officials dismiss criticism of their hiring practices as unfounded. With 300,000 job vacancies right now, "we can't afford to leave a stone unturned," when recruiting, says Jeff Lande, vice president for the Information Technology Association of America. "Companies are spending tremendous amounts on retraining and outreach to all of these communities — in inner cities and at historically black colleges," he says.

Others, however, acknowledge that something is amiss. "I don't doubt on the demographics that it probably doesn't look good," says Ed Black, chief executive of the Computer and Communications Industry Association, which represents companies such as Sun Microsystems Inc., Intuit Inc. and Oracle Corp.

Still, Mr. Black says, "the aggregate of job openings really does exceed the applicants who have high qualifications."

Indeed, the U.S. Bureau for Labor Statistics has projected that over the decade ending in 2008, the country will need nearly 1.7 million additional computer engineers, programmers and analysts. That need is growing even as the number of American college graduates with high-tech degrees is falling, according to the American Electronics Association. The group estimates that 207,056 high-tech degrees were awarded in 1997, down 27% since 1990. Although the number of minorities with degrees in engineering, math and computer science has grown in the past decade, the totals remain relatively small.

Congressional Black Caucus

That's a major reason why limits on H-1B visas will likely be raised. But the coalition and its allies, including the Congressional Black Caucus, are seeking adjustments to the pending legislation that would boost employment among minorities. "I don't have anything against immigration," says Rep. Jim Clyburn (D., S.C.), chairman of the caucus. "But if there is an immigration policy that has an effect of blocking out or locking out native workers, then I have a problem with it."

The White House is listening. President Clinton's senior economic adviser Gene Sperling, stresses that administration support for an H-1B increase is conditioned on inclusion of several provisions designed to promote minority high-tech employment.

One of these measures would raise to $3,000, from $500, the per-visa application fee paid by employers that depend heavily on H-1B workers. Half of the money raised would be used for training programs for American workers, with special emphasis on minorities, women and the disabled. Another 30% of the money would fund computer, math and engineering scholarships for low-income students.

"We have always believed the H-1B issue requires a balance between the short-term needs of industry in a tight information-technology labor market and the long-term need to ensure that our first efforts go into giving American workers the first chance at such high-skilled, high-value jobs," Mr. Sperling says.

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'People' Issues Are Cracks In Aero Industry Foundation

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Aerospace in Crisis

'People' Issues Are Cracks In Aero Industry Foundation

New Management Incentives Are Key to Change

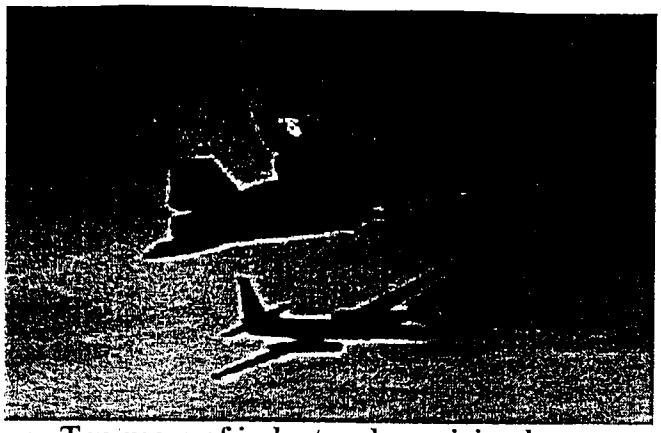
'Hire-and-Fire' Paradigm Is Obsolete

Robust sales of airline transports and a stabilizing defense environment are overshadowing subtle indications that the health of today's global aerospace industry is in jeopardy.

Systemic problems within large aerospace companies in the U.S. and Europe are unseen cancers that could spread quickly, triggering a loss of profitability and a decrease in the quality of air transports, rockets, satellites and myriad defense systems, according to experienced industry officials. Unless corrected, these malignancies will have a detrimental effect on national security and the long-term viability of companies that build critical aerospace systems.

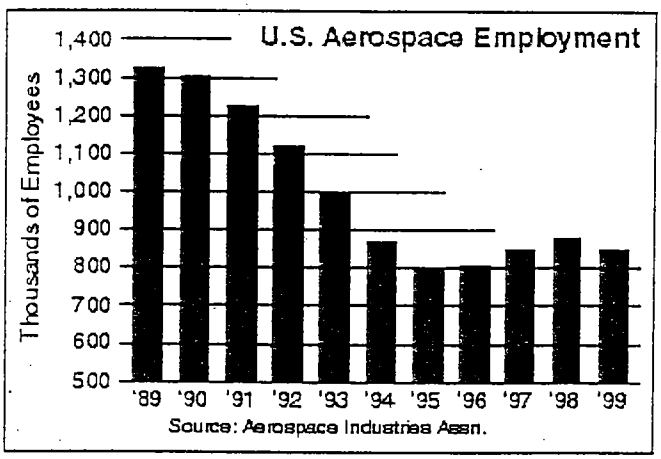
Mergers and industry consolidation in the name of cost-reduction have prompted the growth of effective multidisciplinary teams, but they still require good leadership.

A chronic lack of vision, an emergence of "survival" management and worker priorities, a Wall Street-driven focus on stock prices and short-term returns at the expense of research and development, 10 years of downsizing and a never-ending preoccupation with cost-cutting have taken their toll on the industry.

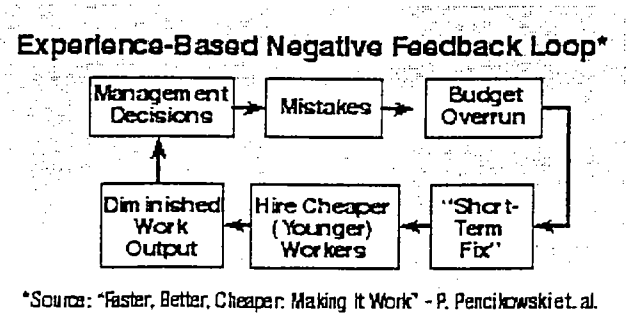


Ten years of industry downsizing have eliminated many of the experienced engineers and technicians who designed and built such benchmark aircraft as the SR-71 and U-2.

In the past, aerospace company "founders and leaders were visionaries who wanted to make a terrific airplane--people like Jack Northrop, who had the idea of a flying wing in 1939. They created the magic that turned into airplanes we see in the skies today," said Sam A. Metalis, a management consultant with more than 20 years of experience in aerospace. "Many people who came into aerospace thought they were going to build the supersonic transport, the B-2 [bomber] and the F-22 [fighter]. They were driven by the fantasy, the magic of making machines fly. That's the motivation that got them into a large company, but they find [themselves] plodding along in an [environment] where nothing they do matters, none of their creativity is appreciated. Soon, they say, "Why am I doing this?"he said.



"Management techniques in aerospace have remained largely the same, and the world has changed around them," said Edward M. Hanna, another management consultant and cofounder of a new company called "FasterBetterCheaper.com." For more than 20 years, "I worked for or with all the majors. I think they're victims of their own success. After World War II, through the Cold War, [the industry had] plenty of money. It was hard to do anything wrong in that environment. Today, many of the executives running aerospace corporations rose to their present positions during these [good] times. They're sticking with those [old] methods, but the world has changed. The old paradigm is no longer valid," he said.



Hanna's views were strikingly aligned with those of David M. Urie, president of Concept Fusion Inc. Urie retired from Lockheed Martin's Skunk

Works operation as the X-33 program manager, and was the person who conceived that single-stage reusable launch vehicle demonstrator. He had previously served as the company's SR-71 program manager, and held numerous engineering and management positions in his approximately 30 years with the company.

"I think the existing aerospace companies are going to continue their practices--which have been successful in the past--[but] the world has changed around them. Today, new talent is going into other fields. It doesn't go into our industry anymore, because we're not attractive. Others offer more freedom and potential rewards," Urie said.

Those new options and motivations are not only undermining existing aerospace firms, but are fueling a grass-roots restructuring of the industry. "There's an absolute revolution going on, and it's being led by companies we never heard about before--Starbucks, amazon.com and Charles Schwab," Hanna continued. "These companies are reshaping their industries by throwing out the old business model and . . .creating a new model. This sort of thing will happen in aerospace--but it will not be led by the major corporations of today. New, smaller companies will be more agile. Their model will be one of involvement and collaboration. They'll treat people as equals, and will [adopt] more of a collegial model with a flatter hierarchy, fewer levels of management and more humanity--all the things that [aerospace] companies today are not."

"I work with many of the small [aerospace] startups," Urie said. "There hasn't been a litter of startups like this since the 1930s, when there were a lot of small airplane companies. People who are dissatisfied with the big organizations are willing to gamble on startups. These people have motivations to stay [with their current employers], but they're dissatisfied. They just don't see things getting fixed. They hear lip-service, but see nothing happening."

As a result, some of the most-talented experienced engineers, managers and factory-floor technicians are leaving the large aerospace companies--either on their own, or through ongoing downsizing campaigns. "Even at the supplier level, we see a lot of people . . . leaving to start their own companies," Urie said. Why? "Dissatisfaction and frustration."

"Treating people as commodities . . . is clearly a serious problem for the aerospace industry," said Will Stackhouse, a high-technology analyst and industry troubleshooter. Prior to retiring from the U.S. Air Force, Stackhouse was the Assistant for High-Leverage Technology, reporting directly to the USAF chief-of-staff.

"**Today, even the best** and brightest are retiring or going to the [non-aerospace] commercial world and applying the old Kelly Johnson approach to startups," he said, referring to the legendary designer and founder of Lockheed's advanced development Skunk Works organization. "But these aerospace industry problems are not news. They're just reaching a crescendo now and becoming more-obvious. Some of us have been talking about them for 10 years. I think some executives are starting to recognize they have a problem, but it's not universally known yet."

Such grim assessments do not resonate well with aerospace managers' views, but it's hard to deny the industry--when viewed as

a whole--has cracks in its underpinnings. The air transport manufacturing sector has experienced problems with quality and productivity, even though it hasn't seen serious failures of new aircraft. However, a string of high-profile failures in the military and civil space launch sector have raised questions about reliability and fundamental policies in what was considered a fairly mature aerospace arena (*AW&ST* May 3, p. 31).

"There's no technical connection [among the latest launch failures], so there has to be an endemic, institutional connection," Urie said. "Those failures are not random. The unifying factor has to be found in procedures, which can be traced to policy levels. Something has happened to alter procedures that, heretofore, have been successful. Or something has occurred that should have resulted in procedure changes that weren't institutionalized. So, we have systems that don't work, even when they used to work."

Why don't they "work" anymore? What has changed? Experienced current and former aerospace executives, managers and engineers surveyed by this *Aviation Week & Space Technology* editor identified some of the dominant factors. Although opinions about specifics varied, these experts agreed on key areas of concern: Non-productive management-motivating factors; the way aerospace employees are treated; inadequate rewards and compensation; out-of-touch management; a pervasive unwillingness to take risks, and the myriad impacts of downsizing. Most of these are tightly linked and must be addressed together.

"We've been discussing this [situation] with a lot of people from [a large U.S. aerospace company] who are 'moonlighting' for Concept Fusion," said Patricia Y. Ames, vice president of business development for the startup. "These are senior people who recognize and comment on the fact that [employees] are thought of as 'commodities.' There are fewer and fewer people that have significant experience, but the industry doesn't seem to appreciate that. [Not many] have gone cradle-to-grave on a program, and those who have are not valued for what they've done."

Ames retired from Skunk Works after serving as a systems engineer on the SR-71 and manager of the program's internal research and development efforts.

The disquieting suspicion that something is wrong deep within the aerospace "system" prompted a five-year study of management practices and the environment faced by today's aerospace companies, managers and employees. Four experienced technical managers with varied backgrounds conducted a systematic survey of aerospace programs and companies (or divisions of large companies) that had one element in common--they were experiencing programmatic troubles. Only aerospace prime contractors having annual revenues of $5 billion or more were included, and all had divisions in California. In-depth analysis was limited to issues that were common to all surveyed firms. Findings were assembled in a series of pending technology-management papers.

Some might claim the study is overly critical of aerospace management, but researcher Metalis said that was not the intent. "There aren't any bad-guy CEOs. They're smart, well-meaning, well-intentioned people faced with a world that's changing at a rate that makes it very hard to plan for the future," he said.

"Executives are doing what they were taught in business school, but the time scale for building and [fielding] airplanes is completely different than [that of] the computer or software industries--orders of magnitude different. The business rules that apply to creating a new PC simply don't apply to creating a new supersonic transport. Where's the incentive for CEOs and boards of directors to fund ideas for new airplanes? This is a real predicament in a world driven by [stock market] day-traders, whose decisions are affecting corporations trying to make plans for 10 years down the line," Metalis said.

The multidisciplinary study did not have the blessings of corporate executives, and it can be challenged on grounds that it did not meet the high standards of a rigorous "scientific" investigation. But it certainly provided valuable insight to several industry characteristics and trends--and immediately struck a sensitive chord.

The study's initial findings were summarized in three technical papers, and the latest version will be presented at the World Aviation Congress in San Francisco this October. After *Aviation Week* quoted Paul S. Pencikowski, a study participant and the paper's author, in a May 3 story about space launcher reliability concerns, dozens of readers requested copies of the team's results.

Titled "Faster, Better, Cheaper: Making It Work," Pencikowski's paper focuses on how aerospace companies can convert FBC platitudes into proactive action. Key points made in the paper and reinforced by those who conducted the supporting study include:

- Great care must be taken when implementing "faster, better, cheaper" processes and procedures, or one of the three elements will dominate. In aerospace programs, FBC often translates to a "lean" development team (cheaper); minimal systems redundancy (cheaper), and substituting computer simulation for testing (cheaper). "Faster" and "better" rarely are given priority.

- Integrated Product/Process Teams require leadership. A rocket-engine company director said managers cannot simply turn IPTs loose and expect them to accomplish lofty goals. If not managed correctly, IPTs suffer from the same weaknesses that have plagued the aerospace industry's matrix management techniques for years--no pride of authorship; no direct reward for performance and chronic worries about job security. "Without personal accountability, there is no personal responsibility for failure," Pencikowski said. "There are no hero-workers, either."

- Experience can mean the difference between a program's success and failure. Ten years of industry downsizing has cut the U.S. aerospace workforce almost in half. Managers and human resources departments should resist a "plug-and-play" philosophy that assumes like-credentials translate to equal abilities. Aerospace has unintentionally rid itself of critical software engineers and programmers, for example, "and I don't think the companies even know they're gone," said Michael C. Davis, executive advisor, office of the Chief Information Officer, at Anthem Inc., a healthcare insurance company. An FBC study participant and software expert,

Davis has worked with IBM, Ford Motor Co., academia and a large aerospace company.

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- Be open to new, effective ways to motivate aerospace employees, then create a positive work environment for them. "Today, aerospace people are very much in a survival mode," Hanna said. "Downsizing is not conducive to building teams. People are most concerned with 'What's best for me?' To survive, [aerospace] companies have to start working smarter instead of harder. People are getting very tired, and they're making mistakes. Managers have to come down from their ivory towers and get involved with the gritty business of management--being involved with their people, as equals."

Can the industry correct missteps taken as it tried to reinvent itself after the Cold War? A senior vice president of a European company observed that "these companies can't change on their own. They have to come apart, and individual employees go to new places and start over. That may be what's required to change the big aerospace companies in the U.S., too."

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AVIATION WEEK & SPACE TECHNOLOGY

Industry's 'Hire-and-Fire' Paradigm Is Obsolete

BY WILLIAM B. SCOTT/COLORADO SPRINGS

Multiple failed space launches during the last year have triggered several technical and safety investigations into "processes" that affect quality, but the real, more-subtle causes may be found in how the aerospace industry handles its people, according to experts who have studied problematic programs.

A five-year collaboration by a group of current and former aerospace industry managers uncovered a number of systemic issues that help explain an apparent degradation in product quality. Their findings are being compiled in a series of technical papers to be disseminated through a new company called "FasterBetterCheaper.com."

"We've been in the trenches and tried to be internal change agents in our organizations," explained one study researcher. "We've documented what is and isn't working, and collaborated more than five years, determining how things could be done better. It's been years-long empirical research."

In essence, the study determined the aerospace industry is trying to use an outdated personnel management paradigm. "The way aerospace management treats its people is a large part of the systemic problems we're seeing in space launch, as well as all other sectors of aerospace," said Edward M. Hanna, a management consultant and study researcher. Hanna has held senior positions with a number of U.S. aerospace companies, was an instructor at the Navy's "Top Gun" fighter weapons school, and once reported directly to the chairman of a major aircraft company.

"The [aerospace] mentality is that every problem has a technical solution," Hanna said. "In fact, our corporations are filled with human beings that have feelings, emotions and aspirations, and exhibit behavior that affects our business. But this whole 'touchy-feely' side is being ignored. We need to come to grips with it. People really are our most important asset. Many companies say that, by they don't act it.

"We have to address some of these people issues--like what's the [impact] of human interaction during a quality design process? Are we getting the best ideas into the design? A space launch vehicle sitting [on the pad] is the manifestation of hundreds of thousands of decisions that were made about the design, the operation and maintenance of that vehicle," Hanna said. "And the quality of those decisions is directly related to the quality of the decision-making process. There's your root cause [of failures]."

A management and Wall Street preoccupation with cost-cutting, accelerated by the Cold War's demise, has forced large layoffs of experienced aerospace employees. In their zeal for saving money, corporations have sacrificed some of their core capabilities--and many don't even know it.

"There's been a tendency--especially under the 'Faster, Better, Cheaper' mode--to replace older, more-experienced workers with younger people. And that's related to a loss of quality," Hanna said.

In a recent design meeting with a major company, Don Bateman, chief engineer for AlliedSignal's Flight Safety Systems, noted that only two of 10 attendees had any aircraft-related design experience. "Most were fresh faces," he said. That dearth of experience eventually can lead to mistakes and quality degradation. "Sometime in the future, we can expect things that should no longer happen, such as [explosive] depressurizations. We're at great risk of repeating disasters of the past," Bateman said.

Periodic loss of design, fabrication and testing experience is not a new phenomena for the aerospace industry. However, there is a significant difference today--one that has not been recognized by many executives. In the past, there were dozens of aerospace companies and multiple government contracts to keep corporations busy. When one company released hundreds or thousands of employees through layoffs, there generally was another firm hiring. Workers joked about being "aero braceros," the aerospace equivalent of migrant farm laborers, because they followed the work, moving among a few companies as fortunes shifted.

All that changed as the industry consolidated and government defense contracts withered. The resurgence of commercial air transport sales in the mid-1990s cushioned the blow somewhat, but the end of that may be in sight. Boeing has announced layoffs of approximately 48,000 employees in a three-year period ending in 2001, with about 7,000 at the St. Louis, Mo., plant going out the door this summer. During 1999, Lockheed Martin is shedding 8,000 employees, and Raytheon Systems Co. is releasing about 14,000 over two years (through 1999). Many of those "excessed" people are leaving the industry altogether, either by choice or necessity.

"In the past, we always had losses of experience, but there was enough activity in the marketplace to keep the pot stirred, so this trend didn't dominate. Now, it *is* dominating," said David M. Urie, president of Concept Fusion Inc. "Management now assumes that expertise is something that can be labeled--a degree or something like that--and anyone carrying that label can get the job done. This disallows all the informal knowledge that experienced, real experts have in their head. And that usually shows up in knowing what *not* to do."

The transfer of this essential "tribal knowledge"--the art of

aerospace--"doesn't happen in school. It happens in a forum where everybody works together. That tribal knowledge is missing in today's aerospace industry, and it's a [key factor] in its problems," said Sam A. Metalis, a management consultant and study participant.

"I'm really scared about the loss of design [skills] now," added a senior engineer for a large aerospace company. "We take so much for granted--structural design, engine and propulsion systems, landing gear . . . and avionics. [We] have a lot of tools like CAD/CAM, but knowledge about how those tools were [developed] and their limitations is being lost."

And the losses go well beyond designers. "The only thing holding [a specific company] together right now are a few good people on the line--several on the production line and a very few on the delivery line," the same engineer said. "They manage to keep things moving, and blow the whistle on things that need it. But, God, it's scary. The world is changing, I know. But we need to change smart."

What is driving the loss of experienced talent, and why can't they be replaced by a new generation of aerospace managers, engineers and technicians? Several reasons highlighted by experts polled for this article include:

- A large number of young engineers are choosing other careers. Aerospace no longer holds an allure for many, who opt instead for biotechnology, computer, software or other high-technology fields that pay better and offer stock options or other wealth-building compensation packages. "Young engineers get into this [aerospace] business, because they imagine it [to be] exciting. But when I interview those same young engineers after they've been on the job several years, they're . . . waiting to leave and get into some high-tech company," Metalis said. "If you're a top-notch techie looking at the type of work, the money and the career lifestyle when [considering] aerospace and other options, why would you choose aerospace? Somehow, management today has to find ways to attract people and interest them in an aerospace career."

- The traditional aerospace paradigm of "hire-and-fire" as workloads fluctuate is no longer appropriate. Managers who assume that workers can be replaced at the next economic upturn, or when the next big government contract is won, are in for a surprise. "People have other options, particularly in software and [information technology]," said Michael C. Davis, executive advisor to the office of the CIO at Anthem Inc. "There's a tremendous shortage of these people, so the model that aerospace works on won't work now."

- Cost-cutting and short-term fiscal objectives have taken priority over the retention of an experienced core of talent needed for future projects and fortunes. "Management has become so detached from the technical ranks that it does not have the ability to evaluate talent any more," Hanna said. "They have a view that 'the parts are interchangeable. Any employee can do any job. I have this young guy right out of college, and he only costs me $50,000 a year, so he can do

the same job as that Ph.D. that I'm paying $120,000 a year.' It's a simplistic view" that does not value experience and capability.

- Politicization of the workplace. Although hardly limited to the aerospace industry, this factor has proliferated as downsizing and mergers created a new aggressiveness to get and hang onto good positions. "A very damaging concept in today's aerospace companies is that the bigger your staff, the more [important] your position, and the more you're entitled to get paid," Hanna said. "We need to respect employees, then [build] a culture that promotes collaboration and downplays competition among individuals inside the company. You'll want the competition to be between your company and your outside competitor companies. Inside, you do everything possible to promote collaboration--a new reward system and flatter hierarchy, [for example]. Then you wouldn't have all the pretensions and pecking orders of today's management."

- A perception that one's ideas, hard work and sacrifices are not valued. "In aerospace, there's sort of an unwritten rule that all the good ideas come from the top," Hanna said. "That's one of the most damaging concepts existing in the industry today. We have to realize that good ideas come from everywhere, and we have to create cultures where those ideas can surface."

Company managers are quick to disagree with Hanna on this point, noting that most aerospace firms have instituted close-knit "integrated" teams and charged them with finding innovative ways to accomplish a task faster, better and cheaper. In some cases, teams are rewarded for their breakthrough ideas with money, promotions and new opportunities "to do it again."

"In practice, it doesn't work that way," Hanna countered. "There's a lot of lip-service paid to these [concepts], but there's quite a disparity between what's said and what's done. For example, on the subject of teaming: It was a wonderful idea, but teaming was dumped on aerospace workers with absolutely no idea how to implement it. People who show up for a team meeting don't know what their roles are, what their mission is--it's just chaos. They really haven't been given the tools to self-organize."

So, what's the answer? Is there any hope that the aerospace industry can straighten itself out, attract a new generation of smart, skilled employees, and generate sustained profits? Some of the polled experts said "no," that the companies of today were incapable of making the massive cultural and systemic changes necessary to survive and thrive.

However, the "FasterBetterCheaper.com" team that conducted the original study of this industry sees a different potential future. They believe that, with external assistance, companies can make the changes required for survival. Some of the techniques the team identified include:

- Getting management to recognize that the aerospace workforce has changed. "Managers are now dealing with 'knowledge workers,' and you manage them differently,"

Hanna said. "You have to treat people as equals, [and develop] a collaborative environment where management is engaged in 'coaching' rather than telling people what to do."

- Train people to work as teams, then provide leadership. That is best done at the university level, but companies must take a more-active role, as well. "There's nothing in our engineering background that taught us how to deal with people," Hanna said. "I spent a lot of time learning how to chase electrons and how physics worked. But when you get into the workforce, you're expected to work with other people, make decisions, deal with conflict, lead people--and there's nothing in an engineer's training that prepares him for this. Companies compound the problem, because they don't recognize this deficiency and don't try to fill the gaps. Training should be given on human systems-decisionmaking, communications, how to be a leader, how to be a follower--all the human skills we need in organizations."V

- Revamp compensation policies. "There need to be more rewards [commensurate] with the value of the labor, and they need to be more widely distributed," Hanna said. "It's important for people throughout the corporation to have an ownership interest. I'd like to see stock options for everyone in the corporation."

  "Wages and salaries have to be competitive, and, right now, aerospace is about 20% lower" than other industries, especially for software engineers, Davis added. "But wage-parity isn't what you really want. You want to pay 20-50% more, so you can groom people who have specific knowledge about your company. Not about the industry, but about your company. You've invested a lot of money in that guy, so pay whatever it takes to keep him. That's good business."

- Restore a tolerance for taking risks. This is difficult in a risk-averse society and industry that provides few rewards for investing in long-term, expensive, but potentially high-payoff technologies and projects. Still, aerospace executives need to educate Wall Street analysts and investment managers about the billions in earnings potential that await patient capital. Those far-reaching, innovative projects also will attract the best and brightest of the next generation, who yearn for the excitement that once was aerospace.

Perhaps that undercurrent of yearning was best summarized by Terry G. Adams, a 36-year-old Continental Airlines pilot, who wrote the following in a letter to *Aviation Week & Space Technology*:

"As the year 2000 rapidly approaches, I am filled with a profound sense of disappointment about the U.S. aerospace industry. Was there anyone who doubted visionary Arthur C. Clarke when viewing [the movie] "2001: A Space Odyssey" the first time? The technological possibilities of "2001" were the fuel of my childhood fire.

"While in college, I learned of the Reagan Administration's proposals for the National Aerospace Plane, "Star Wars" [missile

defense system] and observed the SR-71 at Air Show Canada. I was excited by your dedicated article on the development of a new Boeing SST. Now you see [the reasons] for my disappointment," Adams wrote.

"Wake up! Wake up, Boeing! Wake up industry! Wake up U.S. Government! Don't let the dream die. Invest in the future of the country, perhaps the world. Reaching out and touching someone will not be replaced by the Internet--ever! Raise the bar, build the SST--and do it right!"

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Works operation as the X-33 program manager, and was the person who conceived that single-stage reusable launch vehicle demonstrator. He had previously served as the company's SR-71 program manager, and held numerous engineering and management positions in his approximately 30 years with the company.

"I think the existing aerospace companies are going to continue their practices--which have been successful in the past--[but] the world has changed around them. Today, new talent is going into other fields. It doesn't go into our industry anymore, because we're not attractive. Others offer more freedom and potential rewards," Urie said.

Those new options and motivations are not only undermining existing aerospace firms, but are fueling a grass-roots restructuring of the industry. "There's an absolute revolution going on, and it's being led by companies we never heard about before--Starbucks, amazon.com and Charles Schwab," Hanna continued. "These companies are reshaping their industries by throwing out the old business model and . . .creating a new model. This sort of thing will happen in aerospace--but it will not be led by the major corporations of today. New, smaller companies will be more agile. Their model will be one of involvement and collaboration. They'll treat people as equals, and will [adopt] more of a collegial model with a flatter hierarchy, fewer levels of management and more humanity--all the things that [aerospace] companies today are not."

"I work with many of the small [aerospace] startups," Urie said. "There hasn't been a litter of startups like this since the 1930s, when there were a lot of small airplane companies. People who are dissatisfied with the big organizations are willing to gamble on startups. These people have motivations to stay [with their current employers], but they're dissatisfied. They just don't see things getting fixed. They hear lip-service, but see nothing happening."

As a result, some of the most-talented experienced engineers, managers and factory-floor technicians are leaving the large aerospace companies--either on their own, or through ongoing downsizing campaigns. "Even at the supplier level, we see a lot of people . . . leaving to start their own companies," Urie said. Why? "Dissatisfaction and frustration."

"Treating people as commodities . . . is clearly a serious problem for the aerospace industry," said Will Stackhouse, a high-technology analyst and industry troubleshooter. Prior to retiring from the U.S. Air Force, Stackhouse was the Assistant for High-Leverage Technology, reporting directly to the USAF chief-of-staff.

"Today, even the best and brightest are retiring or going to the [non-aerospace] commercial world and applying the old Kelly Johnson approach to startups," he said, referring to the legendary designer and founder of Lockheed's advanced development Skunk Works organization. "But these aerospace industry problems are not news. They're just reaching a crescendo now and becoming more-obvious. Some of us have been talking about them for 10 years. I think some executives are starting to recognize they have a problem, but it's not universally known yet."

Such grim assessments do not resonate well with aerospace managers' views, but it's hard to deny the industry--when viewed as

a whole--has cracks in its underpinnings. The air transport manufacturing sector has experienced problems with quality and productivity, even though it hasn't seen serious failures of new aircraft. However, a string of high-profile failures in the military and civil space launch sector have raised questions about reliability and fundamental policies in what was considered a fairly mature aerospace arena (*AW&ST* May 3, p. 31).

"There's no technical connection [among the latest launch failures], so there has to be an endemic, institutional connection," Urie said. "Those failures are not random. The unifying factor has to be found in procedures, which can be traced to policy levels. Something has happened to alter procedures that, heretofore, have been successful. Or something has occurred that should have resulted in procedure changes that weren't institutionalized. So, we have systems that don't work, even when they used to work."

Why don't they "work" anymore? What has changed? Experienced current and former aerospace executives, managers and engineers surveyed by this *Aviation Week & Space Technology* editor identified some of the dominant factors. Although opinions about specifics varied, these experts agreed on key areas of concern: Non-productive management-motivating factors; the way aerospace employees are treated; inadequate rewards and compensation; out-of-touch management; a pervasive unwillingness to take risks, and the myriad impacts of downsizing. Most of these are tightly linked and must be addressed together.

"We've been discussing this [situation] with a lot of people from [a large U.S. aerospace company] who are 'moonlighting' for Concept Fusion," said Patricia Y. Ames, vice president of business development for the startup. "These are senior people who recognize and comment on the fact that [employees] are thought of as 'commodities.' There are fewer and fewer people that have significant experience, but the industry doesn't seem to appreciate that. [Not many] have gone cradle-to-grave on a program, and those who have are not valued for what they've done."

Ames retired from Skunk Works after serving as a systems engineer on the SR-71 and manager of the program's internal research and development efforts.

The disquieting suspicion that something is wrong deep within the aerospace "system" prompted a five-year study of management practices and the environment faced by today's aerospace companies, managers and employees. Four experienced technical managers with varied backgrounds conducted a systematic survey of aerospace programs and companies (or divisions of large companies) that had one element in common--they were experiencing programmatic troubles. Only aerospace prime contractors having annual revenues of $5 billion or more were included, and all had divisions in California. In-depth analysis was limited to issues that were common to all surveyed firms. Findings were assembled in a series of pending technology-management papers.

Some might claim the study is overly critical of aerospace management, but researcher Metalis said that was not the intent. "There aren't any bad-guy CEOs. They're smart, well-meaning, well-intentioned people faced with a world that's changing at a rate that makes it very hard to plan for the future," he said.

"Executives are doing what they were taught in business school, but the time scale for building and [fielding] airplanes is completely different than [that of] the computer or software industries--orders of magnitude different. The business rules that apply to creating a new PC simply don't apply to creating a new supersonic transport. Where's the incentive for CEOs and boards of directors to fund ideas for new airplanes? This is a real predicament in a world driven by [stock market] day-traders, whose decisions are affecting corporations trying to make plans for 10 years down the line," Metalis said.

The multidisciplinary study did not have the blessings of corporate executives, and it can be challenged on grounds that it did not meet the high standards of a rigorous "scientific" investigation. But it certainly provided valuable insight to several industry characteristics and trends--and immediately struck a sensitive chord.

The study's initial findings were summarized in three technical papers, and the latest version will be presented at the World Aviation Congress in San Francisco this October. After *Aviation Week* quoted Paul S. Pencikowski, a study participant and the paper's author, in a May 3 story about space launcher reliability concerns, dozens of readers requested copies of the team's results.

Titled "Faster, Better, Cheaper: Making It Work," Pencikowski's paper focuses on how aerospace companies can convert FBC platitudes into proactive action. Key points made in the paper and reinforced by those who conducted the supporting study include:

- Great care must be taken when implementing "faster, better, cheaper" processes and procedures, or one of the three elements will dominate. In aerospace programs, FBC often translates to a "lean" development team (cheaper); minimal systems redundancy (cheaper), and substituting computer simulation for testing (cheaper). "Faster" and "better" rarely are given priority.

- Integrated Product/Process Teams require leadership. A rocket-engine company director said managers cannot simply turn IPTs loose and expect them to accomplish lofty goals. If not managed correctly, IPTs suffer from the same weaknesses that have plagued the aerospace industry's matrix management techniques for years--no pride of authorship; no direct reward for performance and chronic worries about job security. "Without personal accountability, there is no personal responsibility for failure," Pencikowski said. "There are no hero-workers, either."

- Experience can mean the difference between a program's success and failure. Ten years of industry downsizing has cut the U.S. aerospace workforce almost in half. Managers and human resources departments should resist a "plug-and-play" philosophy that assumes like-credentials translate to equal abilities. Aerospace has unintentionally rid itself of critical software engineers and programmers, for example, "and I don't think the companies even know they're gone," said Michael C. Davis, executive advisor, office of the Chief Information Officer, at Anthem Inc., a healthcare insurance company. An FBC study participant and software expert,

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12/18/00, 8:25 AM

Michael Kobold
P O Box 372176
Satellite Beach, FL 32937-0176

US DOL
Chief, Division of Foreign Labor Certifications
200 Constitution Avenue, N W, Room N-4456
Washington, DC 20010

Dear Chief of D FLC:

1. By what mechanism is the plan to wean industry from an H1 visa workforce expected to work? The H1B bills always appear to include this plan, as indicated by the declining numbers for future years placed in every new bill that increases the yearly number of H1's. Since this has been going on for two decades, what is the policy regarding making the numbers decline a reality?

2. Executive Order 11246 makes all immigrants from Asia (amongst other classifications, but comprising 2/3 of the world's population) regardless of sex or wealth, EEOC qualified minorities for affirmative action status. Is this EO still in effect?

Thank you.

Sincerely,

Michael C Kobold

USPS return receipt was received in Jan 2001 but this and other letters (two) were still not answered as of 17 May 2007. MK