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BEATING 'SWORDS' INTO SUBWAYS

By Seymour Melman

orth and south of the Im-Los Angeles airport, the giant complex of Rockwell International factories and offices encloses an area of 4.2 million an area of 4.2 minus. half that space, the two main buildings are a hive of laboratories, wind tunnels, machine shops, assembly areas and warehouses - the largest of the two plants built around an unobstructed central area big enough for a football field. The whole is an impressive manifestation of American industrial ingenuity and might. And, today, it is the scene of an economic disaster.

Entire sections of the plant have been reduced to wasteland. Where hundreds of engineers once worked at closely packed design desks, whole areas are empty. Huge assembly sheds stand vacant. Most of the major office areas have been cleared out. In others, one person out of 10 or 20 is still on a job. For this residual work force, the past year has been a time of growing idleness amid the ruins of a vast production

It was a year ago, on June 30, 1977, that doomsday came to Rockwell International's Los Angeles division. The plant's employees, then numbering 14,000, learned by way of a television news item that the President Jimmy Carter had just canceled production of the B-1. And this was where the B-1 was being produced, Rockwell had spent

trial engineering at Columbia University and co-chairman of SANE. <u>_____</u>

more than five years building up teams of technicians, engineers, skilled workers and administrative staff for what it proudly named its B-1 Division. Now the \$3.8 billion investment in the bomber would have little more to show for itself than four prototypes and a

The division manager had no plans for other work. Without the B-1, there was no alternative except mass dismissals. When the blow fell, 25 engineers who were to report to work within the next month were told by telephone that it was all off. One prospective employee got the word just as the movers were on their way to his house. Another couple reported to the plant just in time to learn that their lobs had been washed As shock waves in the form of cancel-

and subcontractors around the country, dismissal slips began making their appearance at the Los Angeles plant, By September, some 6,000 people had been laid off. Only skeleton crews remained for the last work to be done on the fourth B-1 prototype, in the wistful hope that somehow the project might be re-The calamity at Rockwell is common

enough in those sections of American industry that have been locked into dependence on the military dollar. The Pentagon operates a separate and distinct economy of boom and bust boom for the plants and localities benefited by a new major military contract. and bust for the work forces and local areas affected by a new cancellation. The economic and human disruption wreaked by the demise of the B-1 has been the standard story at defense

..... Seymour Melman is professor of indus-Washington. The "military-industrial

wilderness of fancy equipment.

lations spread to some 5,000 contractors

plants hit by similar reassessments in

larger process that makes it tougher States. empting of technical skills and capital Americans, in unconscious economy that, in cases where the B-I was irrefutable. empting of technical skills and capital resources for aerospace and associated military projects impoverishes the civilian sector and checkmates growth in productivity which in the next has whole by diverting the lion's specifically selected and the civilian sector and checkmates growth in productivity which in the next has a whole by diverting the lion's specifically selected and the civilian manufacture is a practical possibility and not meant the enth change of jobs cancellation, the only work in productivity, which in the past has share of our resources into the Recently, congressmen of in 24 years, most of them been a central element of American military sphere. Missiles, both houses, including repreeconomic strength. The mysterious bombers and nuclear submassentatives of military-depend, military-depend, military-depend, was the Himat (highly maneucombination of inflation and unemployrines do not become part of the ent districts, have been explorof the B-I, on which he worked | verable aircraft technology) ment is largely an outgrowth of this consumption and production | ing ways of planning alterna- | for six years, and bitter about

once unnatural state of affairs. process, contributing to the live uses for military bases its cancellation. Back on the plane designed for unusually Let's take inflation. For a century, standard of living and and factories, During the past job market, he is "sick of the sharp and fast turns during from 1885 to 1985, industrial costs, in- screngthening the country's months union officers have gypsy life" and would seek flight - and some subconcluding wages, rose steadily without economic base. They live a life been confering with congression new work only in the Los Antracting from other companies. cluding wages, rose steadily without causing price to rise at a comparable rate. With plenty of capital and technology available for investment in the civilian economy, work was increasiled to the comparable of the civilian economy, work was increasiled to make an object, and the civilian economy, work was increasiled mechanization was constructed and the civilian economy. ingly mechanized and organization was improved. As a result, productivity are used without renewal or lems of conversion from militiation, he has been applied to the conversion from militiation. rose at an average of about 3 percent a improvement beyond heir alyear. This offset production-cost in- lotted span in an environment | Is owing to the newly demon | for a change. But he has found creases and put a brake on rising of economic and social decay. strated linkage between infla-

By 1965, however, the process was cities cannot be reversed so productivity that is traceable signing and fabricating for exgravely impaired. Ever since World long as the Federal Govern- to the depleting effects of the tremely high levels of preci-War II, the Defense Department had ment uses its tax system to long enduring war economy. sion, strength and stress, and been the largest single user of capital feed its military enterprise Indeed, candidate Jimmy this requires materials that Aircraft Division, there is a and technology in the United States, and starve the urban econo- Carter addressed these issues are too costly and difficult to managerial-technological and this had begun to place serious reand this had begun to place serious repushing arms sales abroad | Sept. 18, 1978, saying: "It is | poses. He is trying other serostrictions on resources available for bolster the sliding dollar. And | easier to talk about beating |

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| Sept. 18, 1978, saying: civilian use. As a result, the productivity growth rate dropped to 2.1 per- for the Fentagon or profit di- it is to convert a production | ing elsewhere on the West | ment. Therefore, it is neces-

(over) of prosperity and slump, di- Americans depend on military of most defense workers. Man-

other industrialized country. odic crisis and whole localities range conversion planning, as cores for the next Pentagon This meant that production vulnerable to sharp deprescosts could no longer be offset sions at the stroke of the Presi- in examining the alterna- let go receive one month's salto the same degree, and, in in- dent's pen, with the whole tives to dependency on the ary as severance pay if they dustry after industry, the con- economy being depleted by its military dollar, the B-1 project have worked for the company sequent cost increase was military sector, and with the is a good place to start. In 1960, for more than five years, and passed along to the consumer | difficulty of shifting some | a high-flying U-2 reconnais- | two weeks' pay if they haven't in the form of higher prices. As military work back into civil sance plane was shot down been with the firm that long. this "pass-along" accelerated, lan production, the situation is over the Soviet Union. If the Few defense workers are able prices began rising at an infla- ripe for reassessment on a na- new Soviet antiaircraft mis- to stay long enough with any tional level. And, in fact, inter. | siles could be effective even at | company to build up pension As prices sourced, foreign est in such an examination has that height, the Air Force reaproducers saw the chance to been growing in recent months soned, then what we needed to firm under the spur of govcapture parts of the American in Congress and in labor, man, was a heavy bomber that ernment contract changes, market with their less expen- agement and academic circles | could duck under the Soviet | On the assembly line, the

sive goods. To a large degree, around the country. radar beams at tree-top level, they have succeeded. For ex- For many, the organcy of fire its load of targeted mis- to have more job security than ample, 20 percent of all auto- the issue stems not only from siles, and duck out again. The the experienced engineers, At mobiles and auto parts now in economic considerations but \$3.8 billion spent on research. Rockwell, for example, the use in the United States are | from a widespread conviction | development and initial pro- | contract with the union (the made abroad. The same holds that there can be no real hope duction was enough capital to United Automobile Workers' complex" lacks conversion capability. A military plant is a giant with a glass industry products; for most of the nuclear arms race so long medium-sized industrial enthal layoffs of production the radio and television sets, as millions of Americans and terprises. "Tough," one might say, "but that's hi-ft equipment and similar important regions of the coun. Even before the first proto-

for the years 1970-1975 — the | nomic trends.

years 1965-70 and to 1.8 percent | vorced from national eco- | spending for their economic | agements in the military agrolivelihood, ... We must face space sector have tended to relowest ever for the United With large numbers of de these problems squarely tain 10 to 25 percent of their States and lower than for any fense workers subject to peri- through intelligent and long- full-stength engineering staffs

workers follow seniority rules.

the chance you take if you go for the consumer items in the electory are economically dependhigh-paying military contract." Except tronics field; for 48 percent of ent on military contracts, bomber came under attack as ers to have steady jobs, "At that the misfortune of the kind that the shoes and for all the 23-mm American capability for unneeded in the era of interovertook Rockwell is part of a much cameras sold in the United proposing a reversal of the continental and submarinearms race requires practical based missiles, and unjustifiation worker and a former for all of us. The military economy has Thus, far from being de- assurance to the powerful | ble in view of its huge cost - U.A.W. regional director, grown so big that it is pushing the civilian economy into decline. The pre- for our prosperity — as many constituencies of the war \$20 billion. The case against ing at Rockwell are majoby

> Rockwell had in hand for this project -- a small pilotiess

case take m some civilian The decline of our great tion and declining industrial talents. His main skill is in denext major military contract? E. Fore, production manager

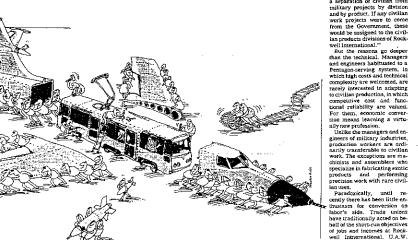
rectly from such work are line from jet fighters to sub. Coast. locked into a military budget way cars. . . We must face Joe Danford and Norm Van tary and civilian work." At that subjects them to vagaries | the reality that millions of | Zanten typify the experience | Rockwell, "below the corpo-

sary to "avoid a mix of mili-

order. At Rockwell, the men older production workers tend

Schrace, a Rockwell produc-

those who started work during



a separation of civilian from | tagon budget of \$139 billion | military projects by division | cannot include riches for all. and by product. If any civilian And Congressmen are deswork projects were to come tined for frustration as consitfrom the Government, these uents hold them hostage for would be assigned to the civil- delivering Pentagon money into this field, with mixed reian products divisions of Rock- and jobs over which they have

But the reasons go deeper than the technical, Managers | ity for economic conversion and engineers habituated to a Pentagon-serving system, in which high costs and technical complexity are welcomed, are rarely interested in adapting to civilian production, in which enmontitive cost and functional reliability are valued. For them, economic conversion means learning a virtu- which was then secretly Unlike the managers and engineers of military industries.

production workers are ordi- Nixon and Ford Administranarily transferable to civillan tions, and in Congress enerwork. The exceptions are ma- gies centered on attracting chinists and assemblers who specialize in fabricating exotic products and performing precision work with rare civilcently there has been little en-

labor's side. Trade unions | pensing advice on self-help have traditionally acted on behalf of the short-run objectives of jobs and incomes at Rockwell Introcruetional II A W. Local 887 outdid the management, if anything, in lobbying for the B-1. With rare exceptions - Walter Reuther developed a scheme for conversion a decade ago -- the unions have been skeptical of the whole idea of conversion planning. A typical view is that voiced by Gerry Whipple, West Coast regional director Aerospace and Agricultural Implement Workers: "California has been built on food, defense and oil. You can't expect us to convert into industries for garbage disposal or cheap

Congressmen compete for military contracts and bases that mean jobs and incomes for constituents. That's why the 1979 budget includes funds for nine F-18 naval fighters whose main publicized virtue is that their engines are made in the Massachusetts domain of Senator Edward Kennedy and Speaker of the House Thomas P. O'Neill. Similar merits involve the delegations from Missouri and California But 60 percent of the serosnace industry's capacity is unused. So even the next Pen-

the United States and abroad with an eye to conversion posfirms had already ventured Legislation to set up capabil-

was bruited during the Kennedy Administration, but the White House was not interested. In 1964, similar legislation was initiated by Senator George McGovern and cosponsored by 57 members of Congress - and was opposed by the Johnson Administration, preparing for stepped-up millington, D.C. These systems tary operations in Vietnam. The idea was opposed by the were outstanding examples of massive cost overruns, with technical failures and excesses of the sort that only the Pentagon can usually afford. military installations and con-Nevertheless, Boeing-Vertracts to the legislators' home tol's manager, Arthur Pits-

There is, within the Defense man, concluded that Americans living in urban centers Department, something called the Office of Economic Adjustwould welcome the introducment, but it has a small staff tion of sleek, modern, electric capable of little more than disvehicles on the model of the well-operated systems of foreign cities. Moreover, since measures after some base the cost of building and mainclosings are ordered. taining subways has reached

Yet all this is only part of the story. Desnite the array of obastronomical heights, the Boestacles to converting to civiling people discovered that it would be far less expensive to ian production, there is solid evidence that it can be done. develop systems operating above ground. Laying out a double-track, light-rail route A short ride east of Philadelcould cost from \$4 million to \$8 phia, the industrial facilities of million per mile, a range that compares favorably with the Boeing-Vertol cover 100 acres along the Delaware River. For price of superhighway con-20 years, Boeing-Vertol has specialized in the production

struction, besides making for for more efficient energy use. of large belienniers for the The Bosing-Vertal managemilitary. At the height of the ment proceeded to develop Vietnam War, its work force managerial, engineering and numbered 13,500; since then, production capabilities in that the reduced military demand direction, Today, two-thirds of for CH-47 (Chinook twin-rotor) its work force is still on heliconter production, modernizmachines and other helicopter ing and modifying existing types had caused employment cuts to 4,300. In 1977, however. models for the decade ahead. the company lost out to Sikor-The other third is at work desky in a competition for supsigning and providing fleets of plying the U.S. armed forces quiet, fast, comfortable railwith a basic combat helicopter for the 1980's. Past practice in the aerospace industry pointed tains an element of industrial novelty. The 275 electric troito mass layoffs as the only levs being built for the Bostonmanagement response, Except that, this time, the com-Authority and the San Franpany had the beginning of a vi-

Since 1971, Boeing's management had been preparing for just such a crisis. Teams of engineers and economic analysts had been surveying the

The 200 rapid-transit cars being built for the Chicago suits. The Sikorsky Division of Transit Authority are 48 feet the United Technologies Corong, air-conditioned, and deporation once tried its hand at signed for a comfortable ride a turbo-train. It soon found at 70 miles an hour. that the domestic market for The serospace team that modern railroad equipment took charge of Boeing-Vertol's was severely restricted by the civilian experiment did so with country's readiness to let the a spirit of boundless self-confirailmads decay. In addition, dence. Accordingly, even Sikorsky couldn't stand up to though many of these managforeign competition. The Rohn ers and engineers had their Corporation of California main experience in the costproduced the BART system of and subsidy-maximizing milithe San Francisco Bay Area tary industry, formal profesand the new subway in Wash-

sional retraining for civilian designing, producing and selling was not considered. And importing skilled transit-vehicle designers from abroad was unthinkable. Eager to get the Boston contract, Bosing-Vertol responded to Federal and Boston agency oressures and agreed to unrealistically early delivery dates. To make the deadlines, they skipped the chase of bill field testing of prototypes and went into production from the drawing board. And they paid the penalty in problems they had

ir suspension and flexible

joints at the center of the 71-

foot-long vehicles to permit

easy passage on tight curves.

not foreseen After the first 33 trolleys were delivered by December 1976, a series of weaknesses and defects showed up. Many modifications had to be made on the spot and the changes built into the production process. In addition, the transit authority decided on several modifications to the standard vehicle design it had itself helped prepare. When these are completed, perhaps by 1979. Boston hopes to have a modern fleet of new vehicles.

80 percent of them available during 90 percent of all rushhournerinds A key Boeing decision was to draw on 17 subcontractors in the United States, Germany and Japan for many key components - importing about 30 percent of them. The need for way cars and electric trolleys. that many imports of key com-The civilian production conponents reflected 25 years of U.S. neglect of electric-transit technologies.At the same time, Boeing-Vertel's produc-Massachusetts Bay Transit tion effort did benefit from some of the company's aerocisco Municipal Railway are space techniques. For inthe first to be produced in the stance, instead of fitting each United States in 25 years. Dewire link separately for each signed to operate at 55 miles function on each vehicle, sets an hour, they have many techof wires for each electrical nical refinements, including

on levour boards, so that each pend largely on Federal poliwire was given its exact length cy. With replacement costs each plant, with the cooperaand the fasteners appropriate for its function. Also, the whole capacity of state and local cov. local community. Such com- and imaginative conversion taries of Commerce. Laboratory network of electrical connections was checked out by a account for 70 percent of the cess to all technical and eco- for some firms and disloca- ments and representatives of low-voltage, automatic, programmed checkout system ment, If there is to be a work. call in outside specialists, that tested for accuracy of wir able relationship between would have the strength of ing before the vehicle was fully nowered The conversion was a chalprograms of the mass-transit

lenge and a problem for the union, too. It would not have supported by a conversion been accomplished without scheme on a rational level. concessions by U.A.W. Local 1069. But the prospect of contiqued employment assured labor's cooperation. The union happened at Rockwell and at neers and workers, Compleagreed to modified seniority and other work rules for the transfer of workers from heliillustrates the central problem panic. And members of Conures are comparable to the copter production into roughly comparable classes of work in the rapid-transit field. Retraining was mainly done "on The Boeing-Vertol manage-At Boeing-Vertol, the manage. today. ment, in sum, had gambled on ment plunged ahead with the prospect of a well-suslimited planning - retooling

tained market for electric- the factory but relying on onpowered mass-transit vehicles sponse in Boston to the new trolley cars suggests that the ered conversion, however, is gamble can pay off. Riders and motormen are enthusiastic. A veteran motorman on "fighting for the new cars." The first year of operation of the new trolleys on Boston's

kind of action reculred:

Every military-serving in-

dustrial firm and military

have with say, more than it

employees should be required

to work out a conversion pla

as a condition of fulfilling a d

fense contract or operating a

a military base. The pla

would have to make specifi

provisions for the changes the

would have to be made in

plant equipment, production

skills and marketing proc

dures if the firm or base had

nione would have to be need

at least a year in advance of

might have to occur. The cost

of the planning work should be

should be done by manage

charged to the military con-

I the time when such a shift

convert to civilian work. Such

Riverside Line saw a 19 percent increase in passengers As pressures for energy saying continue to grow, the outlook for trolleys in other American cities is promising. I to 1971 some 1 275 city trolleys... were operating around the country, all of them of vintage design and most of them more than 30 years old. Just replacing these cars would create a market for the new trolleys. A modest expansion of these systems would open up a market for up to 2,000 new cars -

large enough to keep Boeing-Vertol and a number of competitors busy for some time. In addition, despite their high initial construction costs, the country's urban subway systerns offer a long-term market, if their equipment were to be renewed on some orderly basis, New York City, for example, operates 6,000 subway cars; if these were replaced at tract, at a rate of, say, \$50 per 20-year intervals, 300 new cars employee. The planning itself would be ordered each year. function were prefabricated All this, however, would de- ment-labor committees

ernments, Federal grants now mittees, with mandated acaerospace conversion to mass self-interest. No costly central authority to oversee the local transit and the development planning would be needed. The existence of such plans systems, the process must be would transform the present

situation. There would be ready options for defense factories. There would be time for The contrast between what retraining managers, engi-- conversion capability. At gress could consider military not or should not make the ring-the-economy arguments switch to civilian production. that objuscate the problem

economy with productive, non- getting from his employer, his inflationary growth is very union or the Government. the job training for the retool- much in order. Here we can (2) Provision should be in the United States. The re- ing of engineering and mana- learn something from Presi- made for job retraining. gerial skills. Such self-pow. dent Lyndon Johnson's plan particularly for administrafor "The Economy After Viet- tive and technical employees, rare; and in many fields there nam" in his Economic Report so as to free them from their will have to be systematic pro- of January 1969. He proposed fessional retraining before civilian investments by the Boston's suburban Green Line new civilian work succeeds. Federal Government at \$39.7 (2) There should be a schedreports that his fellows are What can be done, then, to billion per year. Translated to ule of Federal relocation almake conversion more work. present dollars and costs, that lowances, since new civilian

> legislation mandating conver- many in indirect effects. A the country. sion-planning on the local modern Federal agenda would All these supports could be level backed up by Federal highlight things like recon- made available through existpreparation for opening up struction and re-equipment of ing state employment offices. new civilian markets. Here the U.S. rail system — for the and finances by payments by are my suggestions for the same sort of reasons of public defense firms amounting to interest that justified the about I percent of turnover. Federal investment in the In-

planning will involve failures as many engineers per worker as civilian firms. So prodence requires that individual em-

Boeing when each was faced tion of a military contract the first \$20,000 and 50 percent with a slump in defense work could be contemplated without of the next \$5,000. These fig-Rockwell's B-1 Division, the policy for military reasons, ment-benefits program agreed top managers felt they could and not for the spurious spur- to between the U.A.W. and the

habituation to the military

grown beyond the financing tion of representatives of the Even the most conscientious bers would include the Secre-

ment should guarantee some income for two years, based on earnings - say, 30 percent of supplementary unemploymater automobile companies The money paid out would include any other support pay-But spurring the civilian ments the worker would be

sion Commission, whose mem

would mean about 4.5 million tobs will require some people What is needed is Federal new jobs, plus at least that to move to different parts of

ployees be backstopped eco-(1) The Federal Govern-

money spent on new equip. nomic data, and the ability to tions for some people. Military management and labor. The contracting firms, for exam- commission, with a small pie, often employ three times staff, would encourage ecofirms and bases by keeping in

ding the profits of Pentago

capital investment plans preparing manuals to suide the local conversion commi tees in their work, convening perience of the local commit-These modest moves to e

the employee's last year of lings and reporting on the exas an economic crutch f

> U.S. could be a confident an reverse the arms race. Inre-

(4) Congress should set up a economic conversion is the in National Economic Conver- dispensable first step.

nomic connection is berter un

aced by the inflation, eco budgets as normal. Yet we will not be able to rethink our co

new awareness, planning for