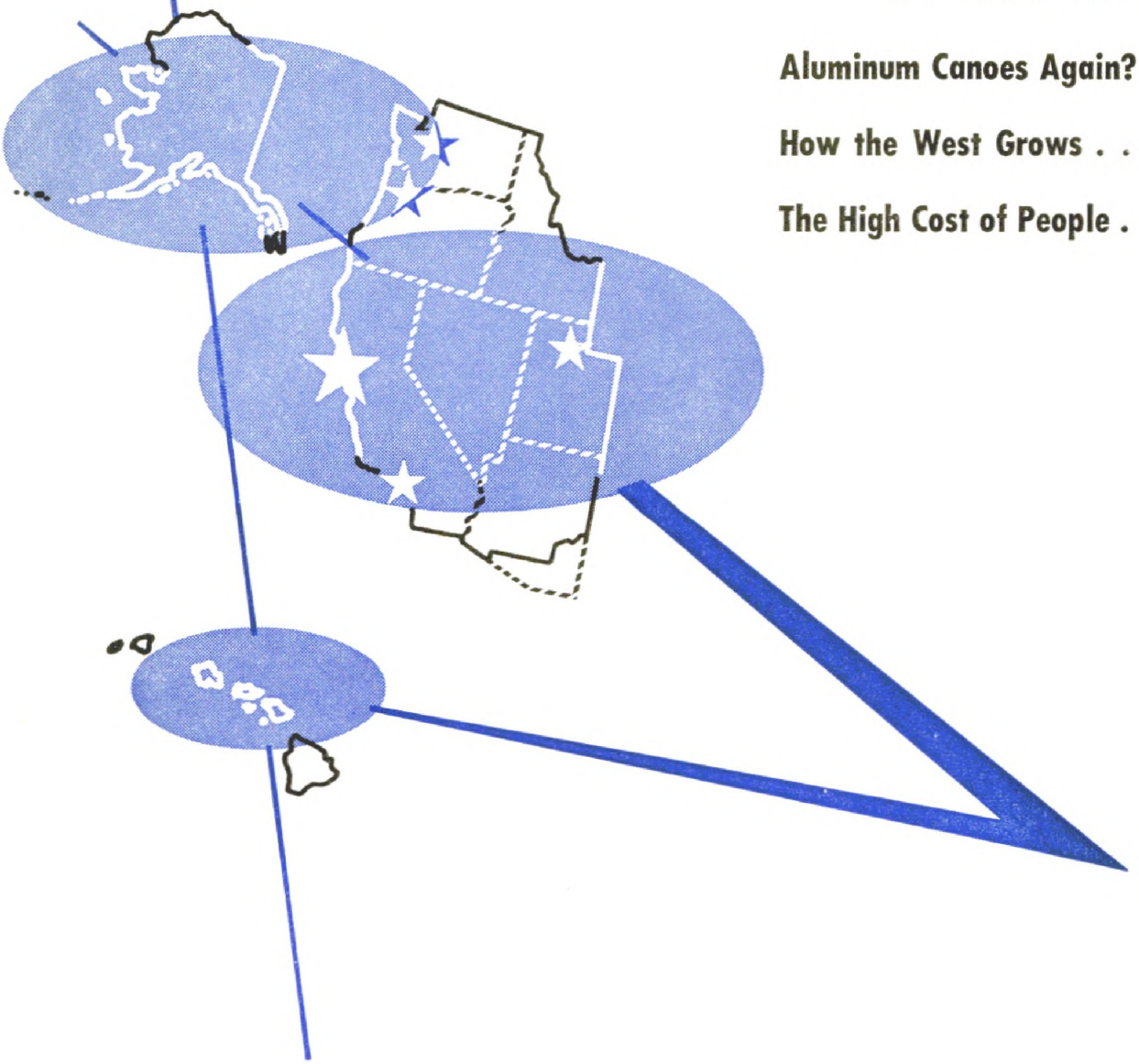
FEDERAL RESERVE BANK OF SAN FRANCISCO

MONTHLY REVIEW



IN THIS ISSUE

JULY
1964

1914 FIFTIETH ANNIVERSARY 1964

Aluminum Canoes Again?

. . . the Pentagon sneezes and the West sniffles, but the resource base that supported the defense boom remains intact.

How the West Grows

. . . the record shows a mixture of fast- and slow-growing industries, but a strong emphasis on rapid growth.

The High Cost of People

. . . rising costs and rising population cause a 60-percent rise in District state-local spending within a half-decade.

Aluminum Canoes Again?

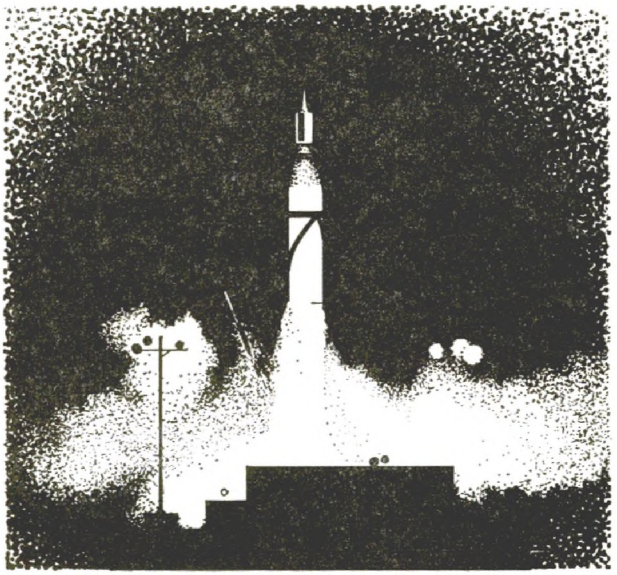
BETWEEN late 1943 and late 1945—but especially in the otherwise joyous period following V-J Day—Western defense plants laid off some 600,000 workers. Housewives returned to their kitchens, farmers returned to their fields, and the unemployed queued up for jobless benefits, but most of the displaced workers soon found ample scope for their talents in the nation's postwar reconversion effort. Displaced defense contractors meanwhile transferred their technological capabilities to commercial markets, and in the process found themselves in such diverse lines as canoes, computers, and coffins.

Aluminum canoe ventures and other projects of that type had difficulty staying afloat, so most defense contractors eventually decided to adjust their operations to the truncated military market. That market, however, did not remain truncated for long; Korea and the Cold War soon generated demands that caused a tripling of defense-related employment in Twelfth District states between 1950 and 1962.

Yet, between late 1962 and mid-1964, in a period when military (plus space) spending was still rising, Western defense plants laid off about one-tenth of their workforce (60,000 workers). The cutbacks, of course, were hardly comparable with the severe declines that characterized the post-V-J period, but they amounted to the deepest and most prolonged reduction of employment of the entire postwar era.

Big-spending customer

There are now about 600,000 District workers in defense-related activities (aircraft, electrical machinery, ordnance, instruments, and shipbuilding), and their products are tailored predominantly for the single—and sometimes changeable—customer in Washington, D. C. Some firms, of course, obtain



valuable business from the domestic and foreign airlines, and hundreds of other firms deal only with the prime aerospace contractors, but in the vast majority of cases the ultimate customer is the Federal Government.

Price is not so important to that big-spending customer as it is to most ordinary consumers. The Pentagon has gone to great lengths recently to disprove that dictum—as any contractor could show—but the fact remains that the customer's main concern is to purchase only the products that are greatly superior in quality. Since the significant competition for new weapons and space systems occurs before the final products are designed, estimates of total cost are necessarily tentative and of limited reliability.

One thing is essential to a successful sales record, however, and that is the capability for scientific innovation. Frequently, the industry's major customer will contract for a supplier to undertake a program of research and development that includes the delivery of the product resulting from this R&D function. In any case, the intensity of the military customer's demand depends primarily on the quality of the systems available to him through

technological breakthroughs — and on the quality of systems available to potential opponents as well.

If a producer has a likely looking product on his drawing board, the customer will negotiate a price directly with him; the alternative, sealed bidding, usually is not feasible because of the extreme differentiation among the products offered by competing companies. Competition among prospective suppliers frequently is very keen, but it will center on the capability of alternative systems for performing a given military mission or meeting a stated military specification.

Entry into this market is relatively easy, provided that the entrant possesses scientific skills that are strong enough to attract government backing. Once inside the industry, however, the new firm may find that its skills are incapable of producing the special type of product demanded by its sole customer, or that the market is being invaded by another new entrant backed by that same customer—and at the same time the firm may find itself forced by problems of excess capacity to bid unrealistically for available work. These problems are compounded by the very long lead-times required between initial product planning and final delivery — and compounded even more by the rapid technological obsolescence that affects most defense products.

The customer's changing tastes

For all these reasons, the firms in this industry pay a great deal of attention to the details of their customer's budget—a budget which, in the past decade alone, has exhibited massive structural shifts as well as significant ups and downs. These changes can best be discerned by analyzing the major components of the Department of Defense budget—military personnel, operations and maintenance (including civilian payrolls), procurement (including aircraft, missiles-electronics, and other equipment), and research-development-test-evaluation (that is, the R&D category)—along with the budget of the National Aeronautics and Space Administration.

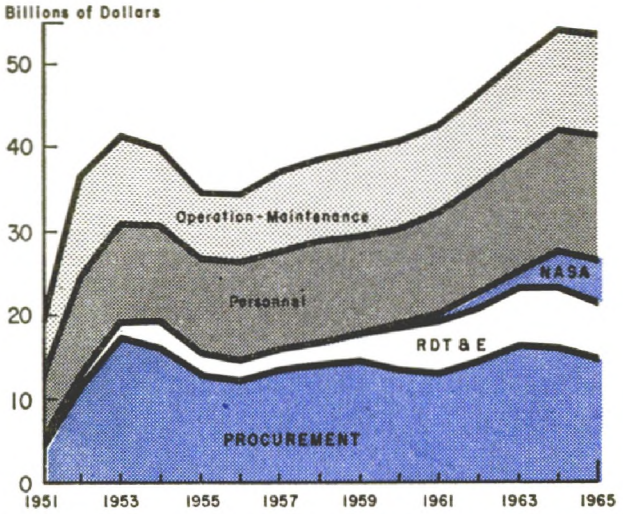
Outlays on military functions of the Department of Defense (DOD) reached a Korean War peak of $43.6 billion in fiscal 1953. DOD spending later dropped sharply, but regained the 1953 level in fiscal 1961—and then jumped to $48.3 billion in fiscal 1963. Over the same decade, NASA (space) spending increased from an insignificant amount to $2.6 billion. The housekeeping components of this package (personnel, operations, and maintenance) rose by one-tenth over the decade. The other components, centered in procurement and R&D, increased by almost one-fourth—and in the process provided a sharp stimulus to Western growth.

The breakdown of the total shows the successive shifts in emphasis from operations to procurement of increasingly expensive weapons and from this to research and development. It shows also the successive shifts in the procurement-R&D category from surface weapons to manned aircraft to missile and space systems, along with the shift in weapons manufacturing from fabrication to electronics and other complex subsystems.

At the height of the Korean War, procurement officers concentrated their purchases on conventional land and sea weapons, such as combat vehicles, artillery, rifles, ammunition, and surface ships. Later, in 1955, they spent almost 70 percent of their procurement dollars on aircraft, but in 1963 they spent less than 40 percent on that product as a result of a growing preference for missile and space programs.

This changing pattern of procurement meant that purchases from private industry shifted from airframes and other fabricated structures to electronics, propulsion systems, and other advanced gear. It meant also that contracts and job opportunities shifted from the companies and the workers who could make land or sea vehicles to those who could

Hardware, R&D due to drop
in 1965, while other sectors rise



Note: Chart shows fiscal-year expenditures for major Defense Department categories and for National Aeronautics and Space Administration.
Source: U. S. Bureau of the Budget.

produce airborne craft, and finally to those who could turn out the sophisticated systems that soar through outer space. The firms that were unable to make the transition either disappeared or shifted to the more tranquil civilian market. The No. 1 military contractor in 1950, for example, was in twentieth place in the 1960 fiscal year.

Major shifts, declining totals

Substantial shifts in the defense-space market basket can be managed when the customer's total purchases are growing rapidly, as in the early 1960's. Problems can arise, however, when the total is declining, as in the mid-'50's—and perhaps again in the mid-'60's. That, at any rate, was the thought that occurred to many observers when defense-space spending, following a 25-percent jump in the 1961-64 period, was budgeted for a decline in fiscal 1965.

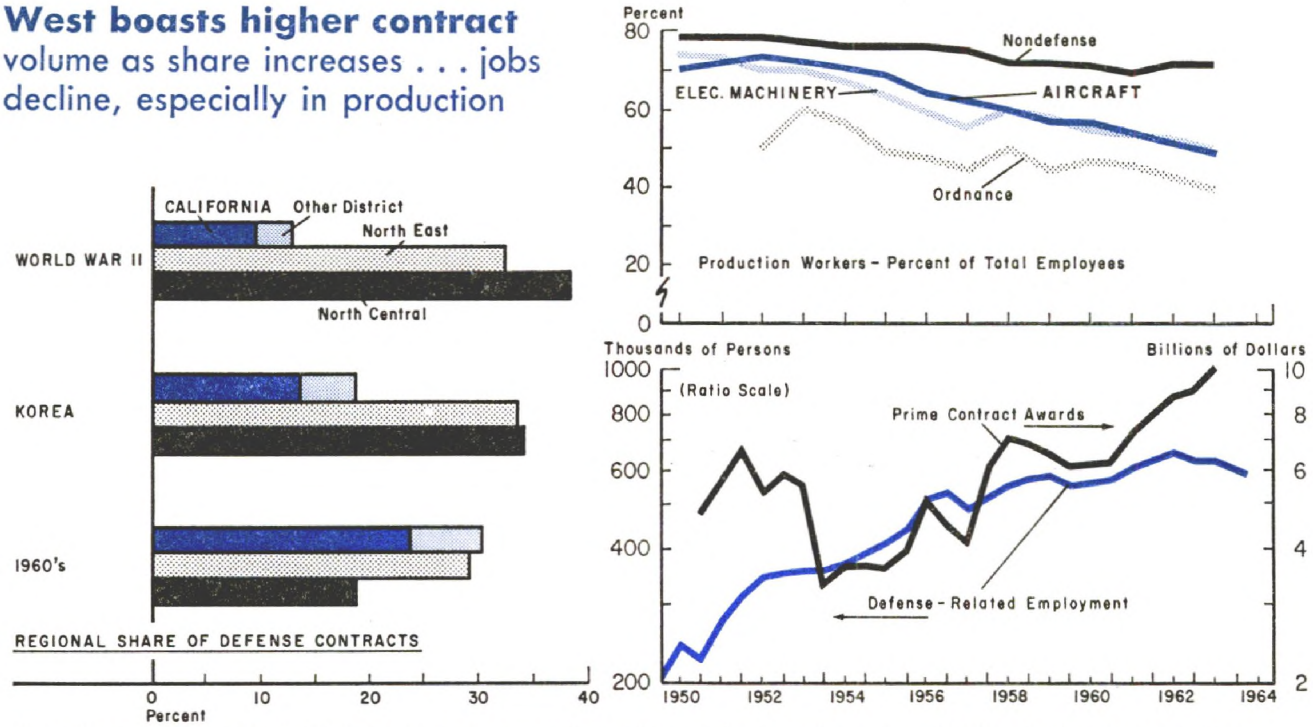
The major categories, as usual, will show quite diverse movements. The housekeeping functions (personnel, operations, and maintenance), after rising to $24.9 billion in fiscal 1963 and even higher in 1964, are now scheduled to increase further, to $26.9 billion, in this new fiscal year. Space agency spending, at about $5.0 billion in fiscal 1965, will be almost double the 1963 total. But other categories will be down. Research and development, after rising from $6.4 billion to $6.9 billion between 1963 and 1964, will lose most of that gain in 1965. Aircraft procurement, which also rose somewhat in 1964, will drop from $6.6 billion to $5.7 billion in 1965. And missile-electronics spending, which peaked at $5.2 billion in 1963, will drop to $4.5 billion in the current fiscal year.

These budget figures to some extent reflect the Administration's economy drive. One result is the DOD cost-reduction program, which led to savings of $2.5 billion in fiscal 1964 and is expected ultimately to yield $4 billion in annual savings. Secretary McNamara's five-year program comes under three headings: 1) "buying only what we need" by eliminating "gold-plating" and by refining calculations of equipment requirements; 2) "buying at the lowest sound price" by shifting procurement from a noncompetitive to a competitive basis (wherever possible) and by shifting contracts from a cost-plus-fixed-fee to an incentive basis; and 3) "reducing operating costs" through consolidation, standardization, and greater operating efficiency.

Aside from the economy drive, the budget cuts reflect a sharp decline in the rate of accumulation of strategic weapons, because of the large and growing inventory presently in existence. Since strategic retaliatory forces are now reaching desired strength, future expenditures will be required mainly for replacement and upgrading. No one knows, of course, what the optimum level is for inventories of these products—but with 800 Atlas, Titan, and Polaris missiles stored away in silos and submarines, and with a scheduled production run of 1,200 Minutemen, most experts seem reasonably content.

Whatever the reasons, the squeeze is on, and the consequences are felt wherever de-

West boasts higher contract volume as share increases . . . jobs decline, especially in production



Note: Chart shows Twelfth District data for contract awards and defense-related employment, and California data for production-worker share of employment.

Sources: Department of Defense; National Aeronautics and Space Administration; Departments of Employment (various states); Federal Reserve Bank of San Francisco.

fense spending is a major bulwark of the regional economy—as is particularly the case in California and the other Western states. This development suggests to some pessimistic observers that the shift which contributed so much to the past growth of the District is now turning against this region. Thus, although budget totals are still rising in one field —the housekeeping sector—where District states account for almost one-fourth of total payrolls, spending *declines* are concentrated in another field—the procurement-R&D sector — where those states account for more than one-third of total payrolls.

One-third of the market

The cutbacks have already had some effect, as was indicated at the outset, but they must be placed within the context of a decade-long record of Western achievement. During that period the procurement situation has shifted drastically in favor of the West, to the detriment of the Northeast and (especially) the North Central regions. Between World War II and Korea, the Twelfth District share of military prime contract awards rose from 13 to 18 percent but then jumped to more than 30 percent of the national total in the 1961-63 period. (By way of contrast, the Northeast share dropped from 33 to 29 percent over the past decade, while the North Central share slumped from 34 to 19 percent.) To cap the climax, District states accounted for about one-half of NASA spending during the space agency's first several years of large-scale operation.

California, to cite the obvious example, has been unique in the variety as well as the extent of its procurement effort. In one recent year (1962), California contractors ranked first in missiles, aircraft, ammunition, miscellaneous hard goods, subsistence, services and construction programs; second in electronics, combat vehicles, and petroleum and fuels; third in weapons; and fourth in ship program contracts.

Why such a predominance? Admittedly, the West gained a head start during and after World War II, as military demand transformed a number of small aircraft fabricators and suppliers into giant enterprises capable of turning out tens of thousands of military aircraft. During this period, while missile technology was in its infancy, the Government encouraged these firms to utilize their plant facilities and technical skills in creating new types of weapons. As a result, many of the aircraft firms developed new capabilities in the missile field and retained their positions as major defense contractors. But this explains only the head start; it fails to explain the dominance achieved by the West within the span of a single decade. The changing structure of the DOD-NASA market basket helps to account for the widening lead; the major factor, however, is R&D.

How to achieve dominance

The firm with a successful sales record in the defense-space market is the firm with the capability for scientific innovation — which means the firm with a superior R&D performance. The company which conducts or manages the research, design, development, and testwork on a new weapon system—and has assembled the engineering talent and experience for this purpose — is in a very strong position to compete for the follow-on production contracts and for new developmental contracts as well. Thus, since District states have accounted for one-half of total R&D spending in recent years, they have been in an extremely good position to maintain and even expand their share of total defense-space spending.

A DOD study of the defense market neatly summarizes the situation: "Successful research and design, or development and testing effort, often leads to follow-on production contracts; and, in turn, engineering work on highly complex new weapons systems creates new R&D capability. The process is circular; and it regenerates itself." The crucial element is a favorable R&D climate, which includes the availability of highly specialized scientific, engineering, and technical manpower, specialized facilities, labor skills, and production experience—all of which the West possesses to an abundant degree.

The "footloose" R&D industries depend on footloose scientists who prefer Western educational and working conditions. With some of the world's leading graduate schools, the West produces a more-than-proportionate share of the nation's scientists; California alone has accounted for about 15 percent of the total national production of physicists over the past four decades. And what the West fails to grow, it can easily import; in the late 1950's, for example, more than 23 percent of the new crop of physicists went to work in the West after receiving their Ph.D.'s, even though only 10 percent of the group came originally from this region.

On the basis of their strong concentration of outstanding scientists and technicians, Western universities and their satellite research centers manage to attract a very large share of Federal R&D contracts. On the basis of the scientifically interesting (and profitable) projects created by those contracts, R&D spending in turn manages to attract into the Western orbit a more-than-proportionate share of the scientific community's outstanding men. Again, the process is circular, and it regenerates itself.

Rising contracts, declining jobs

The supply side of the defense-space market thus has come to be dominated by the West, with its strongly favorable climate for R&D. But the demand side, which in recent years had been geared increasingly to the unique Western product line, has now shown some signs of a shift. Actually, the trend of contracts to District defense firms is still

uncertain — it continued to point upward throughout 1963—but the employment trend has been down since late 1962. Employment peaked at 658,000 in December 1962, and then began a steady slide; about 25,000 defense-related jobs disappeared by the end of 1963, and about 35,000 more by mid-1964.

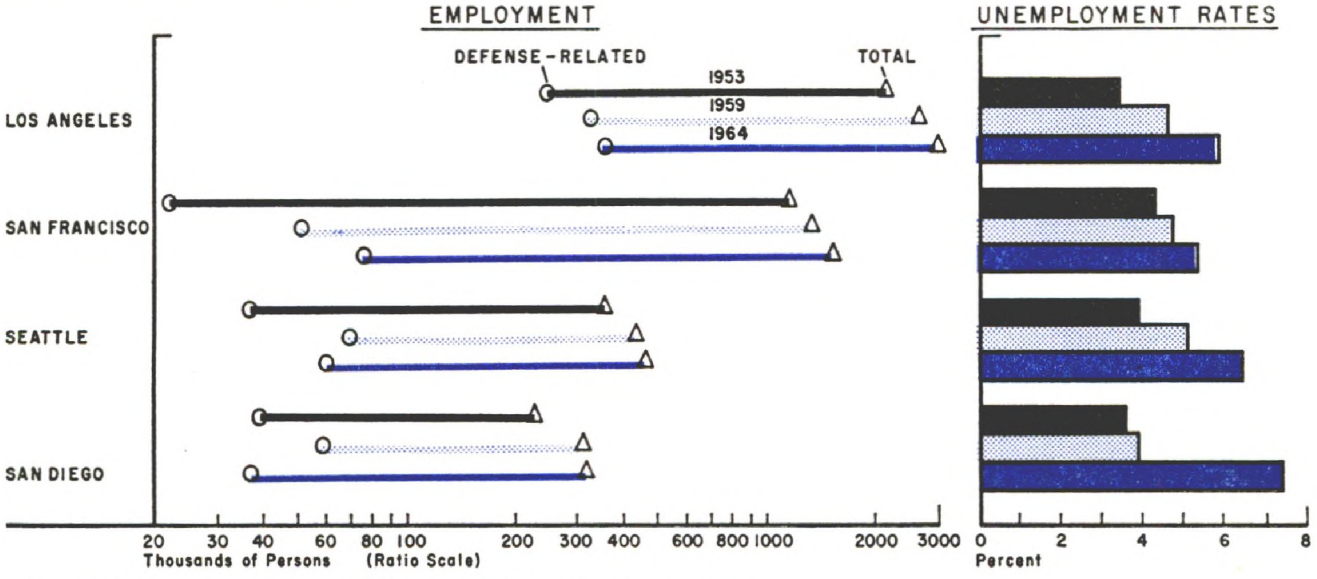
The DOD cost-reduction program is an important factor in the employment squeeze. Many District firms, expecting an extensive expansion of new defense business, apparently built up a cushion of scarce technical talent over the years, only to find little use for that talent when new contracts failed to materialize. What with the recent shift in emphasis from cost-plus-fixed-fee to fixed-price or incentive contracts, the cost-reduction program makes such hoarding of talent unprofitable, since it eliminates the opportunity to charge the cost of "excess" technical talent to the cost of each project. The process is helped along by the DOD requirement that defense contractors make periodic reports on the steps taken to reduce employment on government contracts.

Nonetheless, the major structural shift that has occurred in the procurement-R&D category is probably an even greater factor in the employment decline. In contrast to the situation a decade or two ago, the leading products of the defense industry today are generally expensive, handcrafted items that require the efforts of only a relative handful of scientists, engineers, and skilled craftsmen. The trend becomes evident from a glance at California industry statistics. In that State, nondefense industries require more than seven out of every ten workers on the production line—almost as high a proportion as in 1950. But aircraft and electrical machinery, although they formerly required roughly the same proportion of production workers, now have no more than one-half of their workers on the production line — and ordnance has even a smaller proportion.

Impact areas

The employment decline (whatever the factors involved) has been quite significant, and its effects have been widely felt in those

Slowdown in defense sector creates drag on total employment and leads to higher jobless rates in major Western areas



Note: Chart shows annual averages for 1953 and 1959, and May data for 1964.
Sources: Departments of Employment and Departments of Industrial Relations (various states); Federal Reserve Bank of San Francisco.

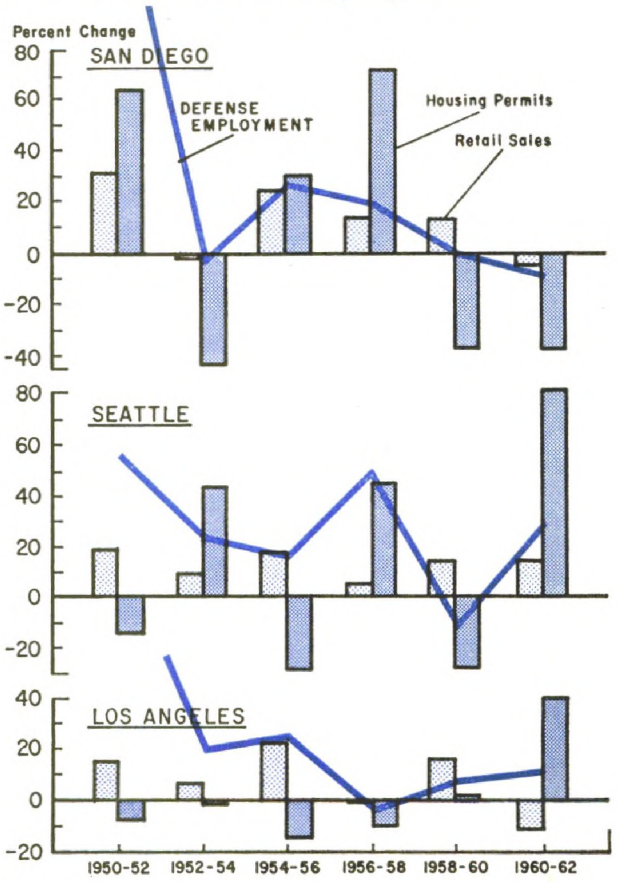
communities whose recent growth has been built in large part on a defense foundation—Los Angeles, the San Francisco Bay Area, Seattle, and San Diego. Just as those areas benefitted most from the past expansion of procurement, R&D, and space spending, they now tend to suffer most from the failure of defense spending to maintain its past rate of expansion.

Between 1953 and 1959—two generally expansionary years—a strong increase in defense-related employment in each of those areas was associated with a comparable increase in total employment, along with a relatively slow rise in the unemployment rate. But between 1959 and mid-1964, a declining rate of growth of defense-related employment (or even an actual decline) was associated with a declining rate of growth in total employment, along with a noticeable increase in the jobless rate. Other indexes of business activity, such as retail sales and housing starts, have shown the same type of response to shifts in defense jobs.

Since the Los Angeles metropolitan area accounts for the vast bulk—60 percent—of District defense-space employment, that area has suffered the largest numerical drop during the decline of the past eighteen months. Defense jobs in that area now number about 355,000, or about 5 percent below the December-1962 peak. Other industries in that vast metropolitan market have helped take up the job slack; three industries (trade, services, and government) have *each* grown by as much as the entire decline in defense manufacturing. Nonetheless, the decline in the defense sector (which accounts for more than two out of five jobs in manufacturing) has helped raise the jobless rate by now to almost 6 percent.

The San Francisco Bay Area (including San Jose) has suffered a smaller percentage decline and a much smaller drop in the actual number of jobs, to about 72,000 today. This

Business indexes reflect shifts in defense-related employment



Note: Chart shows biennial percentage changes for all series.
Sources: Departments of Industrial Relations and Boards of Equalization (California and Washington); U. S. Department of Commerce.

fact, plus the more diversified nature of the Bay Area's economy, which has only one out of four manufacturing jobs concentrated in defense-related activities, accounts for the smaller relative impact of the cutbacks on the area. Here as in Los Angeles, several industries have each shown the ability to offset the entire decline in the defense sector.

The story is somewhat different in the one-industry towns such as Seattle and San Diego. (Defense-related activities account for almost six out of every ten manufacturing jobs in Seattle, and for more than seven out of every ten factory jobs in San Diego.) In both areas, defense cutbacks have been both steeper and more prolonged than in the larger communities. San Diego has recorded almost a 20-

percent decline, and Seattle, almost a 25-percent decline, during recent cutbacks; in addition, both areas have suffered from a declining trend in defense jobs since the late 1950's, although Seattle reached a secondary peak again in mid-1962. As a result, unemployment has become something of a chronic problem in both communities.

Other areas in the District have recorded smaller numerical reductions in defense-related jobs, but in percentage terms the impact has been just as great as in San Diego or Seattle. For example, Utah now has about 13,000, and Arizona about 8,500, in such activities—but in each case the defense job total is at least 20 percent below what it was a year or two ago. These smaller areas, therefore, have proved to be just as vulnerable to defense budget shifts as have the larger labor market areas.

What the models say

This was the situation in mid-1964, as the defense-space budget headed for a modest decline in fiscal 1965. But what if that budget should continue downwards, as economy drives accentuate and weapons system mature? Obviously, offsets would be necessary. So, armed with input-output tables, lagged regression models, and ample computer time, a number of economists are now attempting to quantify the effects of the medicines that have been prescribed for the withdrawal symptoms arising from defense cutbacks.

This approach is typified by a report prepared for the Senate Labor Committee by two University of Pennsylvania economists, Walter Isard and Eugene Schooler. (This and several similar studies are found in the compendium, "Convertibility of Space and Defense Resources to Civilian Needs".) Isard and Schooler examine the possible consequences for the California economy, industry by industry, of a 10-percent reduction in national defense expenditures offset by an equivalent increase in spending elsewhere in the economy. Given the structure of the California economy, they argue that a 10-percent cut in defense spending could destroy more than 75,000 jobs, primarily in the defense-manufacturing and government sectors. Yet, an equivalent increase in dollar spending, allocated in different ways to different sectors, could offset most of the job loss; in fact, a certain mix of consumer tax cuts and increased business and government investment could generate more than 90,000 new jobs. The State's new employment structure would be somewhat different from the old, however, since construction would account for almost half of the total job increase, while defense-manufacturing would suffer a substantial net decline. (Incidentally, the figures cited in this illustration are based on 1960 budget totals; a proportionate decline today would lead to larger but still comparable results.)

Some observers would argue that studies and plans of this sort are unnecessary, since defense and space spending will rebound after the current lull and lead the Western economy to even greater heights. This argument has the logic of history on its side; during the past decade alone, the West has experienced several sharp fluctuations—but fluctuations around a rising trend—as a result of the various shifts in international tensions and the frequent replacement of maturing weapon systems with ever-more-expensive systems. Today, of course, planning for the next generation of weapons is proceeding apace, and it is being supplemented by planning for the further (and increasingly expensive) exploration of space. As a matter of fact, Space Administrator Webb recently furnished to the Senate Space Committee an imposing list of future projects, including everything but intergalactic travel, that bore no price tag but seemed quite capable of carrying NASA expenditures far into the stratosphere.

Of change and diversity

Spending in the defense-space sector may well bound upward again, but many governmental and business leaders—prudently realizing that that sector cannot be a perpetual source of rapid growth—have begun to study the economists' models with an eye to developing practical offsets to defense cutbacks. As a result, committees have proliferated throughout the land to examine the problem along with a host of possible solutions. To date, much of the discussion has centered around the familiarity of both the problem and its solutions, since (the argument runs) the same types of effects flow from a shift in taste in this market and from the shifts in taste that occur daily in all other markets.

In this vein, California's Governor Brown recently told his Advisory Panel on Aerospace and Electronics Industries, "We must take seriously the word 'diversification'." The chairman of the President's Committee on the Economic Impact of Defense and Disarmament, Gardner Ackley, implied the same solution when he testified at Senate hearings on a National Economic Conversion Act:

> "Changes in technology, in consumer tastes and incomes, in foreign competition, in the quantity and quality of our labor supply — all these radically and continuously affect the level and composition of demand or the way in which demand is satisfied. In the aggregate these other changes are surely much more significant and impose even greater requirements for adaptation and adjustment than do the kinds and magnitudes of defense changes we are likely to experience."

The constancy of change and the need for diversification thus are likely to be the watchwords in the struggle to overcome the current and future problems of the Western defense industry. Ackley undoubtedly would argue that the same types of programs that suffice to offset major shifts in other markets would also serve to offset cutbacks in the defense market—and this is no doubt true, provided that allowances are made for the special occupational and regional characteristics of the industry, and particularly for the unique Western capability for R&D work.

The possible fields for expansion include space platforms, supersonic transports, and (closer to earth) rapid-transit vehicles and new types of building materials and techniques. Provided, again, that the Western capability in the R&D field is given free rein, profit and job opportunities will develop in these fields and in fields as yet unknown. Certainly, if the right choices are made, there should be no need to return to the manufacture of aluminum canoes.

How the West Grows

FEW observers have failed to note the fact that the West has won an ever-larger place in the sun during the postwar period. California, with $52.4 billion in personal income, has increased its share of total U. S. income from 8½ percent in 1948 to 11½ percent in 1963. The other eight states in the Twelfth District, with $22.6 billion in personal income, have raised their share of the U. S. total from 4½ to almost 5 percent in the same period.

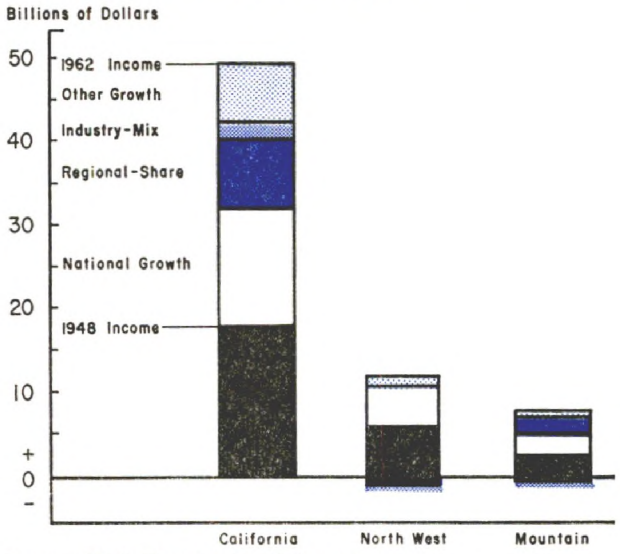
Until recently, most observers have found it difficult to quantify the factors that created this dramatic record of growth. But now, through the use of a new statistical approach —developed principally by the economists Edgar S. Dunn and R. E. Graham, Jr., and applied by Graham in his article in the April issue of the *Survey of Current Business*—the industrial sources of Western growth can be precisely identified.

In this approach, total personal income is broken into two categories: income received by workers and proprietors for their participation in current production (participation income), and non-production income received by persons from investments or from social security and other transfer payments. The analysis concentrates on participation income, which not only accounts for the vast bulk of total income but also can be studied on an industry-by-industry basis.

Three components of growth

To analyze the factors making for the West's growing share of participation income, the total growth increment is dissected into three component parts. The first component is due to the overall growth of the national economy; it is computed on the assumption that the lack of differences in regional characteristics would cause each area to grow at the same rate, so that each area's share of the national total would remain unchanged. The other two components—the elements which make for a *difference* in the growth rate of the West and the nation—come under the heading of "industry-mix" and "regional-share" effects.

Diverse Western regions
display diverse growth patterns



Source: U. S. Department of Commerce.

The industry-mix effect stems from differences in income structure of the West and the nation. The effect is measured by applying to each Western industry in the base year (1948) the difference between the national growth rate in that industry and the national all-industry growth rate. Where the former is larger, the industry obviously is a rapid-growth industry, and it gives a special boost to area growth, with the size of the increment determined by the amount of the industry located in the area. Thus, since the District specializes in this type of rapid-growth industry—with some notable exceptions such as agriculture—it has increased its share of the U. S. income total during the postwar period.

The regional-share effect stems from regional shifts within individual industries. The effect is calculated by applying to each area industry in the base year (1948) the differ-

ence between the percentage change in that industry in the area and the percentage change in the same industry nationally. Thus, since District industries generally have grown faster than their national counterparts, they have added to the District's overall growth during the postwar years.

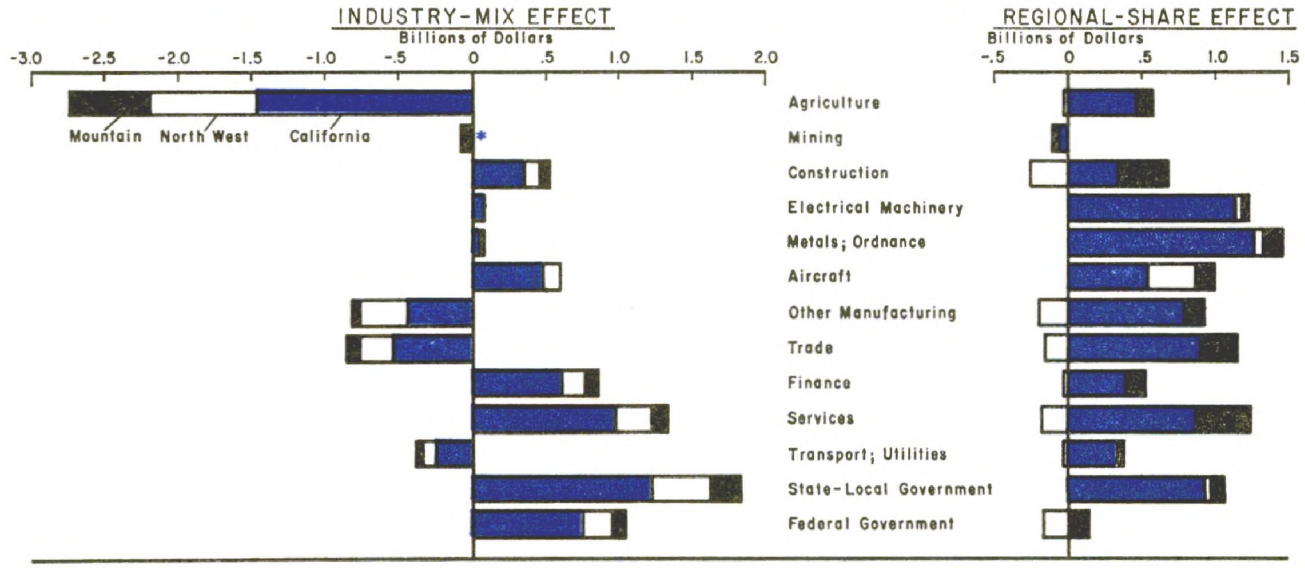
Mix plus share equals growth

In the West as in the rest of the nation, regional-share effects played the dominant role in determining net changes in the geographic distribution of participation income between 1948 and 1962 (the last year for which detailed data are available). But, unlike the rest of the nation, the District benefited from both factors; the region's favorable industry mix added $1.5 billion to its relative growth during the period, while its superior competitive position added a massive $9.5 billion through the regional-share component.

In practically all other regions, the two components of change moved in opposite directions. In the industrial centers of the Northeast and Great Lakes regions, a favorable industry mix brought about substantial relative gains, but these were far outbalanced by a deteriorating competitive position *vis-a-vis* the rest of the nation. Conversely, in the less-developed South and Southwest, an unfavorable industry mix (based on a declining agricultural sector) brought about substantial relative losses, but these were countered by strong gains incurred through the regional-share effect. Only the West exhibited the type of strong and balanced growth which permitted income gains through both effects.

Not unexpectedly, however, the dissimilar District states recorded somewhat dissimilar performances over the postwar period. California's relative gain through its favorable industry mix was bettered only by one state (New York), and its increasing competitive strength gave it a regional-share gain far surpassing that of any single region in the entire country—even the rapidly growing Southeast. On the other hand, the Pacific Northwest (Washington and Oregon) suffered relative declines through both effects, while the Mountain states (Arizona, Utah, Idaho, and Nevada) scored strongly through an increasing regional share but lost slightly through an unfavorable industry mix. (Detailed data are unavailable for Alaska and Hawaii.)

District contains mixture of fast- and slow-growing industries, but most regional industries grow faster than national counterparts



Note: Asterisk denotes $10 million relative decline for California mining.
Source: U. S. Department of Commerce.

Taking all these factors into account, total participation income from current production increased almost 100 percent in the rest of the country in the 1948-62 period. The Northwest just about equaled that overall gain, but California and the Mountain states both outmatched it with overall gains of about 175 percent. (Incidentally, the same general pattern was visible in other types of income. Outside the District, property income increased by almost 150 percent and transfer income by almost 200 percent; the Northwest recorded quite similar increases, but California and the Mountain states experienced far more substantial gains.)

Pinpointing the sectors

These summary figures, however, fail to pinpoint the specific sectors which have brought about the differential growth of the District. To do this, it is necessary to identify those fast- or slow-growing industries that are concentrated in the District (the industry-mix effect), and to identify those industries that are growing faster or slower here than they are elsewhere in the nation (the regional-share effect). In Graham's analysis, 34 industries are analyzed in this manner, but they can be regrouped into 13 major categories.

Each of the District's regions showed a similar industry-mix effect; five slow-growing sectors adversely affected area growth, while eight fast-growing sectors contributed to a favorable effect. Agriculture was the dominant negative factor, partly because its rapid productivity growth contributed to its slow income growth, but the concentration in the District of several other industries with below-average growth rates also contributed to the spotty industry-mix performance. Trade, transportation, mining, and non-defense manufacturing (primarily lumber, food, and oil refining)—sectors which, despite their absolute growth, have lagged in relation to other sectors—provided a drag on California's differential growth and actually created a negative industry-mix effect for the Northwest and Mountain states.

The postwar expansion of state, local, and Federal government activities—traditionally strong contributors to District growth—meanwhile created a strong positive industry-mix effect. The same was true, to almost the same extent, of finance, services, and construction. A significant relative gain was created also by the District's important defense-manufacturing sector, as a result of the defense-procurement shift in favor of Western specialties such as aircraft and missiles.

Striking regional-share gains

As for the regional-share effect, California and the Mountain states showed striking postwar gains, while the Northwest suffered a small relative decline. California's gain from that effect amounted to more than half of its participation income in 1948, while the Mountain states' regional share increased by almost as much as their entire participation income in that base year.

The Mountain states increased their share of every major industry—especially in construction, trade, and services. By way of contrast, the Northwest states experienced relative declines in those categories, and in lumber manufacturing and Federal Government payrolls as well. Washington's aircraft industry was the only Northwest industry to record a substantial increase in regional share during the postwar period.

California, as already noted, increased its regional share more than any single region in the entire nation. It failed to increase its share of Federal payrolls, and it even lost a small amount of its share of the petroleum industry; in all other categories, however, the State's relative gains were quite substantial. About half of its total gain came in manufacturing—primarily defense-related manufacturing—again because of the strong postwar trend in defense procurement in favor of California products. The State's relative gains in trade,

services, and state-local government also were very large.

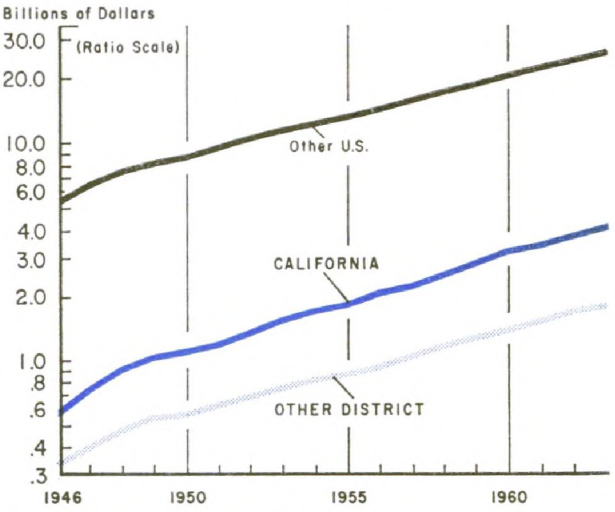
This, then, was the West's postwar growth profile—a spotty mixture of both fast- and slow-growing industries, but a strong grouping of industries that far outpaced their national counterparts. The Northwest, of course, was an exception; its industrial structure tended to be concentrated in slow-growing fields, and most of its industries also grew more slowly than their counterparts elsewhere. The Mountain states' structure was concentrated even more in slow-growing fields, but this unfavorable industry mix was more than offset by the region's ability to increase its regional share of every single major industry. California's record, meanwhile, was almost unique. Despite the state's concentration in several slow-growing sectors (notably agriculture), it still obtained a favorable industry mix, and at the same time it increased its regional share of major industries to a surpassing degree.

The High Cost of People

A NEW YEAR'S EVE party—complete with horns, hats, balloons, and other regalia—was held in Sacramento on June 30, as State officials fittingly celebrated the advent of a new fiscal year and a record-shattering California State budget. The press failed to record any wholesale participation by taxpayers in the festivities, but the event served as a useful reminder of the continued strength of the forces that have generated the rapid increases in state and local government spending throughout the West during the postwar period. But where have the major increases occurred? More important, will expenditures continue to rise at the same rapid pace during the future as well?

The state and local government sector has been a major contributor to growth, as well as a major cost of growth, throughout the postwar period. For example, state-local payrolls in Twelfth District states amounted to $6 billion in 1963—roughly one-twelfth of total personal income in that year. But payrolls and other expenses have persistently exhibited a rapid growth rate; in one typical five-year period (1957-1962), District state-local spending jumped 61 percent, from $6.7 to $10.8 billion.

State-local payrolls grow faster in West than in rest of nation



Source: U. S. Department of Commerce.

People cost 60 percent more

The high cost of people—the cost of providing an expanding package of public services for constantly rising numbers of people—is the basic cause of the rapid expansion of payrolls and public facilities. The cost is met by 8,900 governmental units in the District—nine state governments, 1,373 cities, 234 counties, 66 townships, 2,897 school districts, and 4,320 special districts. A good indication of the purposes for which they spend their

money (and the taxpayer's) can be had from a functional analysis of expenditures for 1962, the last year for which data are available.

The nine state governments in the Twelfth District raised $4.3 billion from taxes and fees in fiscal year 1962, and from the Federal Government they received grants totaling $1.5 billion. The states passed on $2.3 billion to their subordinate local governments, and this left them with $3.5 billion for their statewide responsibilities.

The local governments raised about $4.7 billion from their own sources—relying heavily, like local governments everywhere, on property taxes. From the Federal and state governments (predominantly from the latter) they received $2.4 billion in grants, but they also transferred a small amount of funds back to the state governments. After these exchanges, the District's local governments had about $7.0 billion at their disposal—half again as much as they raised on their own initiative.

In addition to these sums, both types of jurisdictions obtained funds from the marketing of new bond issues and from other sources. Taking into account these additional funds and certain statistical discrepancies, the total amounts expended in the District in fiscal 1962 were almost $3.7 billion for state governments and about $7.1 billion for local governments. (These figures represent "direct general expenditure" and exclude the expenditures of state-operated public utilities, insurance trusts, and liquor stores.) Both totals were strikingly larger than they were just a half-decade before.

State governments have concentrated their direct spending in the fields of education and highways. Even so, the local governments have been pouring three times as much money into education as the states; in addition, they have shouldered major burdens in the fields of public welfare, streets and highways, health, and general administration. Both state and local governments pay for a host of other functions, and in addition allocate about 2-3 percent of their income for interest on general debt.

The cost of children

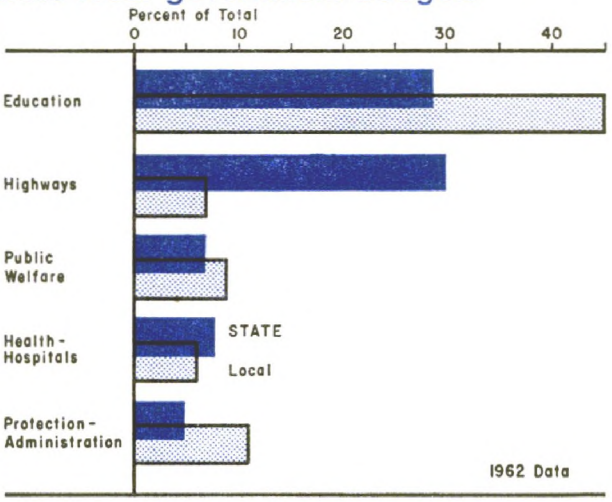
Education is the major cost item, accounting for almost 40 percent of total state-local spending in the District in fiscal 1962. More important, the total increased almost 70 percent, to $4.2 billion, in the 1957-62 period alone. District leaders obviously are well aware of the crucial importance of education to economic growth; in fact, the District pays 19 percent of the nation's total public educational bill, even though it accounts for only 14 percent of the U. S. population. On a per capita basis, it paid $161 in 1962 as against a national average of $118.

The high level of school spending results in part from the fact that the District contains relatively more children of school age than the rest of the nation; in 1962, District school enrollment amounted to 22.5 percent of the total population, compared with 20.9 percent elsewhere. But the District also spends more on each pupil than does the rest of the nation; outlays in 1962 averaged $412 per student here as against $364 elsewhere.

The requirements in each state depend in part on population density. Generally speaking, per pupil costs are higher in sparsely populated regions than in other areas—and the District contains some of the most sparsely populated states in the country. Of its nine states, only California and Hawaii are above the national average in population density; Washington is slightly below the average, and the other states have less than half the density of the nation as a whole. Alaska has about two squares miles of land for every person living in the State, and Alaska thus ranks second only to Wyoming in the amount of money required per student.

Extensiveness of educational facilities is

Schools and highways dominate state-local government budgets



Source: U. S. Bureau of the Census.

an even greater determinant of school costs—as is evidenced in the case of California. That State, with its large population and broad educational program, spends more on public education (at all levels) than any other state in the nation. It has well over half of all the District's school children, and it accounts for nearly two-thirds of the District's total outlays for local schools. The network of state colleges and universities also adds substantially to California's educational expenses: at least one-fourth of those expenses are allocated to higher education.

The cost of cars

Construction and maintenance of highways, roads, and streets is the second largest cost item; it accounted for about 15 percent of total state-local spending in the District in fiscal 1962. Between 1957 and 1962, spending in this category rose 44 percent, to $1.6 billion. The growing population of cars and trucks is of course a major cause of the growing cost of roads; the total number of motor vehicles has been rising about 4½ percent annually in the District, but only about 3 percent elsewhere. The annual count in mid-1963 showed the District with 12 million of the country's 75 million vehicles.

Twelfth District states allocate substantially more for highways, on a per capita basis, than do other states. (The comparative figures for 1962 were $60 and $55, respectively.) California naturally spends more on its highways than do the other parts of the region. But on a per capita basis, the greatest costs are incurred by the states with the greatest distances to be covered between communities—Idaho, Nevada, and, above all, Alaska.

Highway financing depends chiefly on motor-fuel tax revenues, which are specifically reserved (generally by constitutional amendment) for highway construction and maintenance. To keep pace with the growing volume of expenditures, fuel tax rates have been raised during recent years. Washington increased its tax rate from 6.5 to 7.5 cents per gallon in 1961. Alaska and Hawaii both introduced motor fuel taxes for the first time in 1959, and Alaska later raised its rate from 5 to 8 cents per gallon. In 1963 Arizona raised its rate from 5 to 6 cents per gallon, and California went from 6 to 7 cents.

District states also have been receiving about one-sixth of the grants-in-aid provided by the Federal Government for highway construction. The bulk of the grants have been made for the Interstate Highway System, for which the Federal Government pays 90 percent of the cost. (For other roads, it generally pays half the cost, but it assumes a larger share when roads are built in states where public lands make up more than 5 percent of the total state area.) The District's share of the Federal grants corresponds roughly to the proportion of the Interstate Highway System that will lie within the District's borders—which will be about 7,000 of the total mileage of 41,000.

The cost of community

Public welfare expenditures and health and hospital expenditures are the next largest cost items, after education and highways; these

items accounted for roughly 8 and 6 percent, respectively, of total District spending in 1962. Over the preceding five-year period their cost rose 46 percent, to $1.6 billion; thus, these items together grew just as rapidly as highway spending.

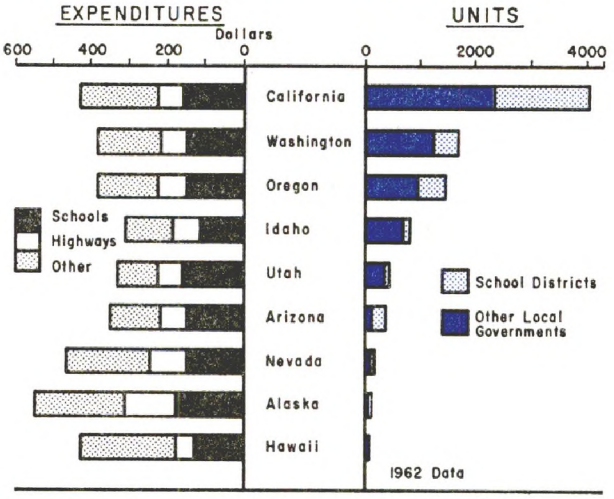
Per capita welfare payments averaged $34 in the District in 1962. Several states spent less than the national average of $27, but high rates of spending by the Pacific Coast States raised the District average far above the national per capita figure. California spent more than $38 per capita—a level exceeded only by four other states.

The Federal Government provided about 43 percent of the total welfare bill, although it does not participate in the administration of most welfare programs. In the District, as elsewhere, administration of most local programs has been handled by counties, with the state governments controlling the size of the payments to recipients and the requirements for eligibility. Here, as elsewhere, high-income states generally have paid higher average benefits, while less-prosperous states have paid smaller individual payments but have been faced with relatively more families requiring assistance.

In the health field, most District expenditures in 1962 were used for the construction, operation, and maintenance of public hospitals. Per capita payments varied widely from the $26 District norm, with Alaska spending almost twice as much as the national per capita figure of $23. Incidentally, this program is financed somewhat differently from the welfare program; the Federal Government spends nearly $2 billion annually for direct support of public hospitals and other related activities, and the states then raise other funds for additional health and hospital financing.

In addition to the major categories listed above, District states and their subdivisions spent about $130 per capita in 1962 for other activities. (The national figure was $97.) At

Per capita spending ranges from $311 to $551 in District states



Note: Chart shows numbers of units of local government and per capita expenditures of state-local governments, by state.
Source: U. S. Bureau of the Census.

both state and local levels, expenditures were incurred for the operation of the judicial, legislative, and executive branches of government, and the local governments also devoted a considerable part of their budgets to police and fire protection, sanitation, and local park and recreation programs. Finally, more than $11 per capita went to pay the interest on debts which these governments have accumulated over the years.

How large a package?

The total District bill for education, highways, welfare, health, and other state-local services in 1962 was $10.8 billion—61 percent more than it had been just five short years before. Will spending necessarily rise that rapidly in the future as well? Pondering that question recently, economist C. Lowell Harriss discerned a group of factors that would tend to increase spending, but he also found several others that would tend to limit further increases, both here and in the nation as a whole. (His comments are found in the January *Tax Review*.)

Among the hopeful signs for taxpayers, Professor Harriss foresees a slowdown in the

price increases that have characterized the postwar period—a period in which prices of state-local purchases have increased twice as rapidly as prices of other items in the national economy. These price increases, among other things, have raised the state-local salary level to the level of private industry, and for that reason the earlier pressure to catch up is now somewhat lacking.

A second restraining factor probably will be revenue stringency. For one thing, lawmakers may decide that the task of attracting new business precludes the imposition of tax burdens higher than those effective elsewhere. For another thing, state and local governments may find that the Federal program of reduced taxes and stable spending precludes the continued rapid expansion of grant-in-aid programs. (For the nation as a whole, Federal grants jumped from $4.1 billion in 1957 to $7.7 billion in 1962.)

Against these and other restraining factors —such as the continuing search for greater operating efficiency—a number of factors can be cited which are likely to expand state and local spending, in the District and in the rest of the nation as well. Necessary improvements in education, highway, welfare, police protection, and the like will lead to increased costs in practically every jurisdiction. So, too, will the pressure generated by the public and by public administrators for expanded services. Built-in expenditure increases — as in debt service, pension commitments, and automatic salary increases—are another expansionary force, and so also is the necessity to replace facilities at much higher cost levels than those at which they were first built. Moreover, per capita expenditures may continue to rise, as they have in the past, in tandem with the increasing urbanization of the Western population. (On the other hand, Alaska and other thinly-populated areas may realize some economies through increased population density.)

These expansionary factors will now be strengthened, according to many legislative observers, by the greater voice given to the urban population by the Supreme Court's recent ruling that state legislatures must be apportioned on the basis of equal population. Over the long run, the ruling may well lead to stronger demands for expensive urban-oriented programs in the fields of education, welfare, and rapid transit. The restraints on increased spending will be strong, as Harriss notes, but (if recent history is any guide) the taxpayer will continue to pay more for the expanding package of public services which he demands.

Western Digest

Banking Developments

In June, total bank credit at weekly reporting member banks in the Twelfth District rose $433 million. This compares with a June-1963 gain of $560 million. . . . Loan expansion accounted for two-thirds of the June increase and purchases of municipals and Federal Agency securities made up the rest of the gain. Loan demand was strongest from business, nonbank financial institutions, consumers, and government securities dealers. . . . Business borrowing over the corporate tax date was greater than a year ago—but it was less for the month as a whole—while the expansion in mortgage holdings was almost two-thirds smaller than in June 1963.

Employment and Unemployment

Employment declined during June in the nation as a whole, but trends were mixed in major District states (seasonally adjusted basis). Largely because of a drop in farm jobs, California's total job count remained steady and Washington's declined. . . . California's unemployment rate edged up to 6.0 percent in June; it had already risen, from 5.7 to 5.9 percent, between April and May. Washington followed a similar trend, with the jobless rate rising from April's 6.4 percent to 6.7 percent in June. The national rate, which had dropped from 5.4 to 5.1 percent between April and May, rose again to 5.3 percent in June. (All rates seasonally adjusted.) . . . California's total employment held steady at about 6.6 million, with a small increase in nonagricultural employment being largely offset by a decline in farm employment. Total employment in Washington dipped during June—from 1.06 to 1.05 million—again as a result of relative weakness in agricultural employment. . . . The declining trend of employment in defense-related industries continued in California, with a drop from 511,000 to 507,000. In Washington, employment in this sector levelled off, at least temporarily, at 60,000.

Production and Trade

Receipts from District farm marketings in May dropped 2.6 percent below the year-ago total, with both crop and livestock sales contributing to the decline. In the three preceding months, returns exceeded 1963 levels—but the improvement in receipts came about only because of heavier marketings, since most prices were below year-ago levels. In May, however, the volume of marketings was not sufficient to offset the price decline. . . . District crop prospects are mixed. Most dry land crops reflect the lack of moisture early in the growing season. For example, indicated wheat yields are considerably lower than last year in all major wheat-producing states of the District except Washington. However, the output of irrigated crops, such as fruits, is expected to be larger than in 1963 despite freeze damage to the apple and grape crops. . . . During the four weeks ending June 20, District department store sales were 7 percent higher than during the corresponding period a year ago. For the nation, they were 6 percent higher.