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the price of progress

Here, in an interview with Dr. Arlon Tussing, is insight into what the biggest Alaska construction boom of all will bring: a "pinch" in meeting construction demand and more inflation for Alaska. Also, how the federal government has supported and perpetuated Alaska's inflated prices.

It's in the cards that 1970 through 1974 will bring to Alaska a construction boom that staggers imaginations. Money and demand will be there, in great quantity and on short notice.

And while great benefits will accrue from the boom, Alaska will pay a certain price for the luxury of sudden prosperity. Dr. Arlon Tussing, young Alaskan economist, offers insight into what 1970 to 1974 will bring in a special interview with Alaska Construction & Oil Report.

Dr. Tussing sees 1970 leading into a two to three-year "pinch" in supply of a great demand for construction services in Alaska. Construction demand from three sources will coincide, peaking in 1971 and 1972 with needs that Alaska's existing construction industry will be hard-put to meet.

Building of the Trans-Alaska Pipeline and related access roads and feeder pipelines will place one kind of demand on the industry, and it's highly likely that public construction may spurt at the same time. State government, with $900 million in bonus bid revenues, may be anxious to indulge a luxury long denied Alaska by providing matching funds for as many federal-state projects as possible. Local governments, with security and credit strengthened by a wealthier state, will be out with bond issues to build sorely-needed sewers, streets, power plants and other public services. Coinciding with demand from industry and government, private commercial building will boom like never before; Alaska is becoming a 'glamor' investment area and financing will be available for new office and retail structures. Homebuilders, already hard-put to meet the market, will face increased demand.

Consequence of the coming construction "pinch" (stiff competition for available labor and supply services) will be higher prices paid for construction services right on down the line from main contractor to the laborer. Since construction is the instrument contributing most to Alaska's artificial regional inflation, Dr. Tussing believes that inflation within the industry will spill out quickly into the general economy. Alaska prices, with certain exceptions, will increase sharply.

Land and housing costs will skyrocket, and will be the leading factor in increasing Alaska inflation. Cost of professional and manual services in Alaska will climb; business services such as accounting and legal advice, blue-collar services such as maintenance.

Commodity prices will not be affected, at least as drastically, by the boom, Dr. Tussing believes. Cost of groceries, clothing and general merchandise have been decreasing in Alaska's urban areas over the past few years, or at least the 'real cost' of goods in relation to rising inflation Outside has decreased. Chain stores, and improved transportation to Alaska, have had a lot to do with this.

In the end, commodity prices may actually decrease, or at least fail to inflate, because of increased volume demands for goods from a larger population. An increase in volume turnover in commodities will have a definite effect in producing lower unit prices.

Inflationary instrument

The construction industry seems to have been near the heart of the process of regional inflation in the past, Dr. Tussing contends.

"This will almost certainly be at the heart of the problem over the next few years, also," he says.

"High construction costs cause or are associated with generally high levels of prices, high costs of living, high costs of doing business and high money wages through three related economic mechanisms: One, building costs are translated directly into housing costs and costs of business overhead.

Two, high wages and rates of return to capital and enterprise in construction become the norms for the rest of the Alaska economy.

Three, enlarged cash flows from construction create a willingness and ability to pay higher prices and wages in other sectors of the economy, so long as there is someone willing to pay inflated prices for a large volume of construction."

Dr. Tussing goes on:

"This 'someone' in the past has largely been the federal government; in the near future it will be the oil industry and industries associated with it."

High construction costs stem from a number of interrelated factors, Tussing points out, including but not limited to:

"Environmental factors; permafrost, snow cover, wind, temperature extremes, seasonal variations in daylight, which affect both structural requirements and construction methods.

"Two, avoidable or unavoidable seasonal and cyclical fluctuations in construction activity, which increase labor procurement costs, labor turnover, charges for idle equipment and inventories, and unemployment insurance costs.

"Three, increased material costs associated with delivery delays and other transport unreliability.

"Four, monopolistic restrictions and exploitation in the labor, capital and materials markets.

"Five, timing and methods of awarding government construction contracts.

"Six, the inability to utilize economies of scale because of low population and economic densities, plus low productivity associated with poor organization, management and techniques in parts of the construction industry."

"The effectiveness of any solution, or any program to deal with Alaska regional inflation depends upon an ability to cope with some or all of these conditions," Dr. Tussing says.

"The existence of each of them can be demonstrated, but we do not have a good understanding of the relative importance of each one, or exactly how each factor operates. There is not sufficient information for effective action."

"A serious study of the Alaska construction industry is needed, urgently. One of the products of this study would be a sorting out of what parts of Alaska's high construction costs are inescapable and what parts can be remedied. Prior to such a study, however, the most promising area would seem to be in an agency finding information of future housing requirements, future business and government construction plans, future business and government construction plans, future labor requirements and supply.

"There could be estimates or projections on a monthly basis for 18 months in the future, quarterly estimates for 18 additional months, and annual estimates for an additional two years, all revised monthly or quarterly. This would help both business and government to plan contracting activity and procurement, and contractors would have stable projections with which to gauge equipment purchases and material sources.

"Another important part of such a study would be the identification of inappropriate and wasteful techniques and

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their causes. Productivity in the parts of the construction industry is lower than can be explained by environment or location. Are there new techniques or organizational methods which can improve productivity or circumvent particularly high-cost elements in the production picture?

"Another area would be federal-state-industry cooperation in timing and methods of contracting and procurement. The oil industry, and the federal and state government between them, account for a very high proportion of total construction activity in the state. Are there ways in which they can cooperate rather than compete to bid up the prices of labor and materials, productive factors which would be in limited supply when construction contracts are "peaked".

New techniques in cold-weather construction can proceed all year around, Dr. Tussing points out. Why could contracts not by cycled so that a contractor is busy at all times of the year, instead of in a rush during summer and closed-down during winters. Labor costs could then be evened out.

"The J. C. Penney's store in Fairbanks was built largely during the winter. The contractor and client thus avoided excessive overtime costs for labor during summer, plus the cost of closing down the job for the winter," Dr. Tussing says.

"It's known that a man has less overall productivity when he works a 12-hour shift than when he works an eight-hour shift. Thus, in reality overtime in Alaska is just a way of disguising a pay raise for the man to work for a given company during the peak labor-demand part of the season. Labor wages fluctuate according to whether the season is busy or slack, and overtime is just a way of increasing pay to attract good workers.

"If the laborer were able to work eight hours a day 48 weeks a year, he would be less tempted toward offers of lush overtime abeit temporary employment. Industry costs would then be stabilized, with maximum productivity for the dollar paid, Dr. Tussing believes.

Communication problem

Another problem facing Alaska contractors is a certain lack of communication within the industry, and between industry and government agencies researching techniques for use in the North.

"There is today a great deal of knowledge of how things can be built well, and inexpensively, in the North," Dr. Tussing says.

"Yet few in the industry seem to be taking advantage of this information that is available. Organizations such as the Army Corps of Engineers and the University of Alaska's Arctic Environmental Engineering Laboratory have done a great deal of work in Northern building problems. Yet for all of this, construction in Alaska proceeds using the same techniques used 10 and 20 years ago, or patterns used Outside with more insulation added.

"There are a few apparent reasons for this apparent technology-gap" Dr. Tussing said. "Innovation and new technology is expensive, although the long-run savings is there. With the scale of construction activity in Alaska, particularly home building, it's cheaper just to use the old methods.

"What we need is an "extension service" for the construction industry in Alaska, something modeled after the university's extension service for farmers. Government bears the cost of research and practical application of new technology to agriculture because farmers by themselves can't afford research and experimentation. The same thing is true in Alaska's construction industry; contractors can't always afford research, and so government should subsidize research to benefit the industry. In the long run, government will save itself considerable expense by doing this,

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since a good part of Alaska construction will always be funded from the public sector.

The culprit

If construction is the unwitting instrument creating Alaska inflation, federal government policies are the final cause of inflation, Dr. Tussing believes.

"For almost 30 years the federal government has dominated the economy of Alaska; and each federal agency has been willing to pay whatever prices demanded of it to accomplish its mission. Each agency has accepted the prevailing wage and price structure, and by doing so has helped to validate and perpetuate it.

"The biggest individual item in this demand over the whole period," Tussing says, "had undoubtedly been defense construction. Whatever the mode of contracting or the cost-rationale at the particular time, defense construction has been de facto a "cost plus" operation since the beginning of World War II. It remains so today. Defense Department missions have been charged with exceptional urgency, and if they had cost constraints they were small compared with those of other government agencies, and virtually nonexistent compared to the normal situation in private industry.

"The small number of contractors

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SELECTED BUSINESS RATIOS, U. S. AND ALASKA CORPORATIONS
MEDIANS, 1965

INDUSTRY		Current Assets to Current Debts TIMES	Net Profits on Net Sales PERCENT	Net Profits on Tangible Net Worth PERCENT	Net Sales to Tangible Net Worth TIMES	Net Sales to Inventory TIMES	Total Debt to Tangible Net Worth PERCENT
General Building Contractors	U. S.	1.5	1.4	9.7	7.2	- -	196.0
	Alaska	3.4	6.6	29.1	7.6	- -	171.1
Heavy Construction Contractors	U. S.	1.7	3.2	11.5	3.7	- -	109.3
	Alaska	3.0	12.5	76.4	9.2	- -	161.0
Plumbing, Heating, Air Conditioning Contractors	U. S.	1.8	1.7	9.0	5.8	- -	156.1
	Alaska	4.3	4.7	28.0	8.3	- -	88.1
Electrical Contractors	U. S.	2.1	2.2	11.7	5.3	- -	119.4
	Alaska	3.5	4.9	32.1	5.7	- -	52.3
Food & Kindred Products Manufactures	U. S.	2.7	5.0	13.6	8.6	31.1	95.4
	Alaska	5.0	5.3	19.1	3.2	2.4	69.2
Canners	U. S.	1.7	2.5	10.1	3.6	4.5	95.4
	Alaska	4.4	5.	14.6	2.8	2.0	57.2
Lumber Manufacturing	U. S.	2.4	3.9	10/0	2.6	5.6	70.5
	Alaska	7.8	11.1	35.5	3.2	3.2	44.6
Printing, Publishing, Etc.	U. S.	3.0	7.4	14.7	2.7	- -	81.5
	Alaska	14.3	14.1	37.6	3.1	- -	161.4
Grocery Wholesalers	U. S.	2.7	1.2	10.0	11.0	50.5	150.8
	Alaska	5.4	2.1	24.2	18.0	5.4	290.3
Machinery, Equipment Whilesalers	U. S.	2.5	1.9	9.6	4.8	6.8	112.0
	Alaska	2.6	8.6	33.9	3.6	2.1	110.5
Miscellaneous Wholesalers	U. S.	2.4	2.4	12.9	11.4	2.2	154.7
	Alaska	17.4	2.4	19.1	7.7	5.1	372.2
Lumber & Other Building Materials Dealers	U. S.	3.7	1.9	7.4	3.4	7.7	89.7
	Alaska	2.5	2.8	27.6	5.8	2.8	214.1
Groceries and Meats Dealers	U. S.	2.0	1.3	12.2	9.0	16.6	87.1
	Alaska	2.9	2.3	13.7	6.4	7.3	167.8

Sources: United States: Dun and Bradstreet, Key Business Ratios, 1965. Alaska: calculated from state business tax returns by Roger A. Bye for the Federal Field Committee for Development Planning in Alaska.

with the experience and capability to operate in Alaska and the requirement that defense contractors pay "prevailing wages" in an area where the current wages prevail precisely because government is willing to pay for them, has provided a bonanza for construction entrepreneurs and transient construction laborers alike.

Tussing goes on: "Another cost-inflating aspect of the Alaska construction situation which federal agencies have consistently accepted and probably perpetuated in their contracting practices is the extreme seasonality of Alaska construction activity, even in those areas with relatively mild climates. Coupled with this seasonality is the practice of paying for great amounts of overtime during the short construction season. This happens despite great evidence that construction crews accomplish little more in twelve hours than in eight."

"It is instructive to see that construction wage differentials are among the highest in Alaska industries. Nor is it surprising that heavy construction contractors constitute the most profitable business sector in our recent regional inflation study (ed.-see chart), with a median net profit in 1965 of 76.4% against tangible net worth, 6.6 times the comparable ratio in the rest of the United States.

"Market power in the construction industry is based upon 'normal' (like anywhere in the U.S.) barriers to entry of labor, capital and enterprise, and upon the sluggish adjustment of these factors to increases in demand, coupled with a willingness of the federal government to pay whatever costs 'prevail' under these circumstances. The rates of return to labor, to capital and to entrepreneurship in government contracting have thus become the opportunity costs of respective productive factors in the private housing market and in business construction. It would not be surprising if inefficient patterns of work and of seasonal activity, developed in a sector where cost constraints are minimal, were also carried over into the non-government sector.

Tussing goes on:

"To the extent that parts of the local service sector also have market power, to the extent that federal recognition of differentials becomes a benchmark for other markups, and to the extent that construction payrolls provide the income with which to finance inflated prices for other goods and services, federal contracting and procurement sustain both the demand factors "pulling" and the cost factors "pushing up" Alaska prices.

"Defense contracting and procurement is not the only culprit here," Tussing says.

"Almost every federal agency and program in Alaska has participated in the inflationary process to the extent that it was required to pay Alaska prices for construction, materials, services and personnel. Earthquake and flood recovery projects underwritten by the Corps of Engineers and Small Business Administration; projects of the Economic Development Administration for depressed areas, real estate appraisals for the Federal Housing Authority, the Veterans Administration and other mortgage-guarantee agencies, cost levels authorized by the Bureau of Public Roads in Alaska Highway projects, and very important, the 25 percent cost-of-living allowance for federal employees and the setting of wage-board rates for federal personnel at rates prevailing in Alaska, all of these are part of the picture.

"In addition, federal regulatory agencies seem to have been tolerant of transport monopolies, and have been inclined to predicate rates upon the protection of particularly inefficient carriers.

"The inability of competitive cost con-

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...of the University of Alaska press and available to the public for $12 a copy. It contains 111 pages of maps, tables, and descriptions of building design criteria in Alaska, permafrost, thawing and freezing indexes, geology, glaciation, sunlight, weather, and data on Alaskan waters including depths, currents, tides, ice conditions, and temperatures.

The book is divided into five main sections (1) Physical description of Alaska (2) Alaskan waters (3) Light (4) Climate, and (5) Engineering Information.

Philip R. Johnson of the Institute of ...Environmental Engineering and Charles W. Hartman of the Institute of Water Resources co-authored the book. It draws from and develops information researched and compiled by the U.S. Weather Bureau, U.S. Geological and U. S. Coast & Geodetic Surveys.

The Atlas was published under the direction of Dr. Charles E. Behlke, director of the Institute of Arctic Environmental Engineering and former director of the Institute of Water Resources. It was funded by the Federal Field Committee for Development Planning in Alaska. □

James A. Anderegg, a sanitary engineer, has been named to head the newly-created Division of Environmental Health in the Alaska Department of Health and Welfare.

"We are fortunate, indeed, to have a professional in environmental health with the training and experience of Mr. Anderegg," Governor Keith Miller said in announcing the appointment. "He will play a vital role in carrying out my Administration's effort to insure a proper balance between development and our unspoiled natural environment."

Anderegg, on loan to the Alaska Department of Health and Welfare from the United States Public Health Service, is a graduate of the University of Cincinnati with a master's degree in Sanitary engineering from the Massachusetts Institute of Technology.

Before accepting his present assignment, Anderegg was Chief of the Environmental Health Section in the Division of Public Health, Department of Health and Welfare.

Prior to this, he had a series of assignments with the United States Public Service, including six years in Alaska, not counting his more recent work with the State. □

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straints in the private sector of Alaska's economy so far to hold down the prices and wages paid by the federal government reflects the fact that the private economy is relatively small and composed of a new natural resource industries unable to resist inflationary pressures generated elsewhere, and of service activities dependent upon the multiplier effects of income from federal expenditures and crude-resource export.

"There's little doubt," Dr. Tussing says, "that, as the largest economic force in Alaska, the federal government must bear direct responsibility for the economic backlash its spending policies have developed in Alaska. In 1968 federal payrolls were more than one-third of Alaska personal income; federal, state and local government together constituted about two-fifths of all employment and for about half of all wage and salary payments in the state. In addition, activity of the service sectors of the private economy and of construction ultimately depend largely upon income injected into the state from federal expenditures.

"Prior to the Arctic oil boom of 1968-69, federal expenditures must have been responsible through income multipliers and 'backward-linkages' for about three-fourths of Alaska's gross product." □