File w/ editorials

FROM THE STANFORD OBSERVER
NOVEMBER 1976

'It's unwise to trust only saints, saviours'

"If the only leadership we as a people will dignify with our trust is a leadership of saints and saviours. . .we are in for some tough times indeed," President Richard W. Lyman of Stanford told a *Time* magazine conference on leadership, in Washington D.C.

"We are in danger of coming to believe that no one can be trusted to speak of moral issues or enlist moral energies unless he or she owns nothing, carries no organizational responsibilities, possesses no authority of office or status—in short is untrained and inexperienced at coping with moral problems in public life. . .

"It has been a point of pride with Americans, from colonial times, to be mediocre followers, and to put stress on the virtues of the individual who is from Missouri, takes orders gracelessly, and who would much prefer to strike out for the open country and be free of institutional constraints.

"Clearly the myth long outlived the realities of accomplishment. In World War II, with the frontier long closed and the greatest bureaucracies ever to run a war at work on both sides, the American GI was supposed to be—and often was—the 'take-charge guy,' the resourceful individual who, unlike the robots from less-favored lands, would respond to altered circumstances or sudden crisis with ingenuity and courage, and without waiting for orders."

Lyman said there is "a pervasive unwillingness to take the time and trouble to understand the institutions we have developed and must work with and through and their inherent limitations, with which

See TRUST, p. 8

Trust

continued from p. 1

leaders must come to terms.

"This, as much as the actual failure of these institutions, breeds cynicism or its Siamese twin, Utopianism, fills the air with outrage, and overloads the courts with litigation.

"Scapegoating leadership becomes a much easier way of explaining any institutional failures than serious attention to what the institution is being asked to do, and how well adapted it is to doing it.

"As someone (else) has said: 'Americans today expect more and more from a government they trust less and less.' And that is true for other kinds of institutions as well.

"Not only is more expected, but responses to almost any problem are sought from almost any institution. No longer do people look to business to solve business problems, educational institutions to solve educational problems, and so forth.

"Any organization, provided it's large enough to be visible and to be suspected of having disposable assets under its control, is asked to solve any problem, however irrelevant to its mission, experience, or capacity. . .

"An institution, asked to perform a service it is not equipped to perform, responds ineptly. The ineptitude is not seen as a predictable result of a misdirected request, but of the incompetence or worse of the institution and its leadership.

"Perhaps this is the result as much of poor leadership as poor followership.

"Businesses too quick to proclaim themselves, through so-called institutional advertising, interested in practically anything but earning profits; universities too willing to let their basic tasks of education and research be shunted aside in the interests of taking on tasks of social reform they are not equipped to manage; political leaders promising not only to govern us well and honestly, but also to restore the lost authority of the family and resolve for us the moral dilemmas of abortion—we are all asking for public disillusionment each time we wax thus expansive."

Lyman currently heads the Commission on Federal Relations of the Association of American Universities.

File Editorials

Science and law

Howard T. Markey, Chief Judge of the U.S. Court of Customs and Patent Appeals, gave an address earlier this summer on science and the law before the New Jersey Patent Law Association. Here, verbatim, is a small part of what he had to say. The full text of the address, which marked Markey's receipt of the Jefferson Medal, is published in the June 1977 issue of the Journal of the Patent Office Society.

Like all good marriages, that of science and law is not formed of identical partners but of different partners complementary to each other. The differences, though profound, are not fatal. Science seeks knowledge of facts; law seeks justice which may rise above and beyond the facts. Justice may be tempered with mercy; a fact may not. Science can tell us the amount of shoe leather consumed in a given march; law is the music we march by. Science is a metronome for the melody of the law.

Science rests on the material; law on the moral, ethical, and philosophical. Science teaches us what we can do; law tells us whether we should. Science seeks certainty; law deals with the uncertainty of the human will. Science emphasizes the general; law the particular. Scientific proof is standardized; legal proof varies with probabilities. Science determines; law compares. Science finds fixed relationships; law establishes rights and duties. Science analyzes and predicts phenomena; law clarifies and controls conduct. Science describes; law prescribes.

The things of science are only those which can be observed. The things of law, like justice and mercy and truthfulness and reasonableness and honesty and compassion and responsibility, cannot themselves be seen.

The laws of science, like gravitation or Newton's laws of motion, are inviolable. The laws of humanity can be broken. Hence we prosecute the outlaw and not the falling rock.

Science weighs, counts, and measures matter; law defines and protects the values a society holds dear.

Man has learned to build on knowledge and experience in the fields of science and the application of science we call technology. He has not yet learned to do so in morals and ethics, where every baby starts from scratch. Yet there is hope, for with every new baby our troubled race gets a new start. And to the extent that law rests on morals and ethics, not just on force, we may someday begin to build an ethical structure of grandeur and excitement equivalent to that of science. To do so requires an understanding of the relationship between law and science beyond their differences.

As in every good marriage, the partners need each other. The relationship of need finds law needing to employ the empiric methods of science, where they fit, in a lawyer's world so dependent on and infused with science. And science needs law to aid in determining the monumental ethical questions it now confronts and which it cannot answer empirically, like the use of experimental drugs and procedures on human beings, genetic experiments like those with recombinant DNA, modifications of the environment, the effects of "social engineering," treatment of laboratory animals, and the relationship of science to politics.

As in human marriages, each partner brings an influence on the other. Science and technology move the law toward new fields and the need to change and grow. The law tames, controls, and channels science and technology.

The blindfolded lady of justice, like many wives of dynamic men, has been a helpmate and a softening influence on her scientific partner from the time man crawled from the swamps until he walked on the moon. When the lady's counsel has been ignored, the purveyors of perverted science have ended by burning humans in furnaces and by making lampshades of human skin.

Only the law can deal with threats to life, liberty, and the pursuit of happiness, like those which lie in the technology of computer data banks and electronic surveillance devices. In a broader sense, unless law controls science, man will become, in Thoreau's phrase, "the tool of his tools."

Thus science and law must be treated as legitimate lovers, not as living in sin. □

C&EN editorials represent only the views of the author and aim at initiating intelligent discussion.

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WASH STAR
NOV. 9, 1975

Ralph Nader

'The Bigger, the Better?'

For over 100 years the slogan, "the bigger, the better" has guided the business community.

Even today, few executives would question the validity of such a slogan. Banks with assets exceeding $30 billion, oil companies with sales over $30 billion annually and insurance companies with millions of policyholders are believed to be big because they are better for consumers and the country.

ARE THEY? Let's look at the bigness issues a little more closely:

1. Smaller companies can do a better job for the consumer than the giants are doing in the same industry. This is true, for example, in the pricing of life insurance or servicing by truck companies. Small businesses, whose owners know they can win under fair competition, are unable to fight the political and predatory market practices of their opposing goliaths.

2. Companies can become so large that government cannot allow them to fail. While small business is perfectly free to go bankrupt, big business can go to Washington — for a bailout. Apart from the more sensational welfare case of the Penn Central, big corporations are in Washington all the time asking for handouts on the grounds that if they don't get them they will go broke and damage the economy.

3. Giant corporations very often mean giant monopolies or giant monopolistic practices, which fleece consumers out of billions of dollars, as detailed by the Senate anti-monopoly subcommittee over the years. Frequently big business forces small business to go along with their anti-monopoly violations.

4. **BIG** corporations, historically without much of an innovative record, just as historically have lunched off lone inventors or small firms. A Department of Commerce study in the mid-'60s showed that individuals were the source of most inventions that helped build the economy, not the fabled corporate laboratories.

In 1964, Donald Frey, vice president of Ford Motor Co., noted that auto suppliers, not the big auto companies, were the prime source of innovation.

5. Big corporations gravitate toward massive technologies because it is more profitable for them and more expensive for consumers. Recently, big technology is more likely to induce tax concessions or government subsidies.

In the quest for energy adequacy, why develop the abundant agricultural wastes and residues or other solar energies when there are more complex, expensive and government supported technologies like nuclear power around?

6. **BIG COMPANIES** can resist more strenuously the displacement of their existing technology by a more abundant form of new technology that is cheaper for the consumer. AT&T has preferred underseas cables at the expense of satellites; the three television networks long opposed cable TV development with its dozens of channels.

7. Big companies can control government and abuse significant political power more easily. Du Pont in Delaware, Union Camp in Savannah, Ga., and U.S. Steel in Gary, Ind., are only a few of the company states or company towns where bigness becomes virtual government. It is hard to think of small business overthrowing South American countries.

8. Conglomerate companies can afford to ignore one consumer sector if they can profitably shift to other consumer sectors, compared to firms rooted entirely in a smaller community. In such a case, only small business can fill the gap.

9. Large corporations encourage widespread community rootlessness by requiring constant moving of families between branch offices or plants.

10. Big companies are more likely to be inefficient than smaller-scale alternatives. Prof. Joe Bain has shown how, in several major industries, it is plant size, not company size, that determines efficiencies. The steel industry is a case study of that point. One giant publisher recently contracted for a series of books to a tiny publisher because it was cheaper than doing it in-house.

THE WHOLE question of efficiency needs a fresh review in other contexts as well, such as the side effects, maintenance costs, or injuries to consumers.

There need not be a reverse dogmatism in favor of all small enterprises to justify a critical examination of business bigness in our economy. Or to justify asking what such bigness is doing to our society's preferred values of individual initiative, responsibility and freedom from the giant organizations' conforming pressures.

MAR. 14, '76
WASH. POST

A Closet Capitalist Confesses

By Michael Novak

THE DAY I HEARD Michael Harrington say that most liberals are "closet socialists," I knew by my revulsion that I had to face an ugly truth about myself. For years, I had tried to hide, even from myself, my unconscious convictions. In the intellectual circles I frequent, persons with inclinations like my own are mocked, considered to be compromised, held at arm's length as security risks. We are easily intimidated.

The truth is there are probably millions of us. Who knows? Your brother or sister may be one of us. The fellow teaching in the class next to yours; the columnist for the rival paper; even the famous liberated poetess—our kind, hiding their convictions out of fear of retribution, lurk everywhere. Even now we may be corrupting your children.

We are the closet capitalists. Now, at last, our time has come. The whole world is going socialist. Nearly 118 out of 142 nations of the world are socialist tyrannies. A bare 24 are free-economy democracies. We are the world's newest, least understood and little loved minority. It is time for us to begin, everywhere, organizing cells of the Capitalist Liberation Front.

I first realized I was a capitalist when all my friends began publicly declaring that they were socialists, Harrington and John Kenneth Gailbraith having called the signal. How I wished I could be as left as they: Night after night I tried to persuade myself of the coherence of their logic; I did my best to go straight. I held up in the privacy of my room pictures of every socialist land known to me: North Korea, Albania, Czechoslovakia (land of my grandparents) and even Sweden. Nothing worked.

When I quizzed my socialist intellectual friends, I found they didn't like socialist countries, either. They all said to me: "We want socialism, but not like Eastern Europe." I said: "Cuba?" No suggestion won their assent. They didn't want to be identified with China (except that the streets seemed clean). Nor with Tanzania. They loved the *idea* of socialism.

"But what is it about this particular idea you like?" I asked. "Government control? Will we have a Pentagon of heavy industry?" Not exactly. Nor did they think my suggestion witty, that under socialism everything would function like the Post Office. When they began to speak of "planning," I asked, who would police the planners? They had enormous faith in politicians, bureaucrats and experts. Especially in experts.

"Will Mayor Daley have 'clout' over the planners?" I asked, seeking a little comfort. "Or congressmen from Mississippi?" My friends thought liberal-minded persons would make the key decisions. Knowing the nation, I can't feel so sure. Knowing the liberal-minded, I'm not so comforted.

Since they have argued that oil companies are now too large, I couldn't see how an HEW that included Oil would be smaller. My modest proposal was that they encourage monopoly in every industry and then make each surviving corporation head a cabinet officer.

See CAPITALISM, Page C5

Novak is a Catholic theologian whose books include "Choosing Our King."

Capitalist Confesses

CAPITALISM, From Page C1

Practical discussions seemed beside the point. Finally, I realized that socialism is not a *political* proposal, not an *economic* plan. Socialism is the residue of Judaeo-Christian faith, without religion. It is a belief in community, the goodness of the human race and paradise on earth.

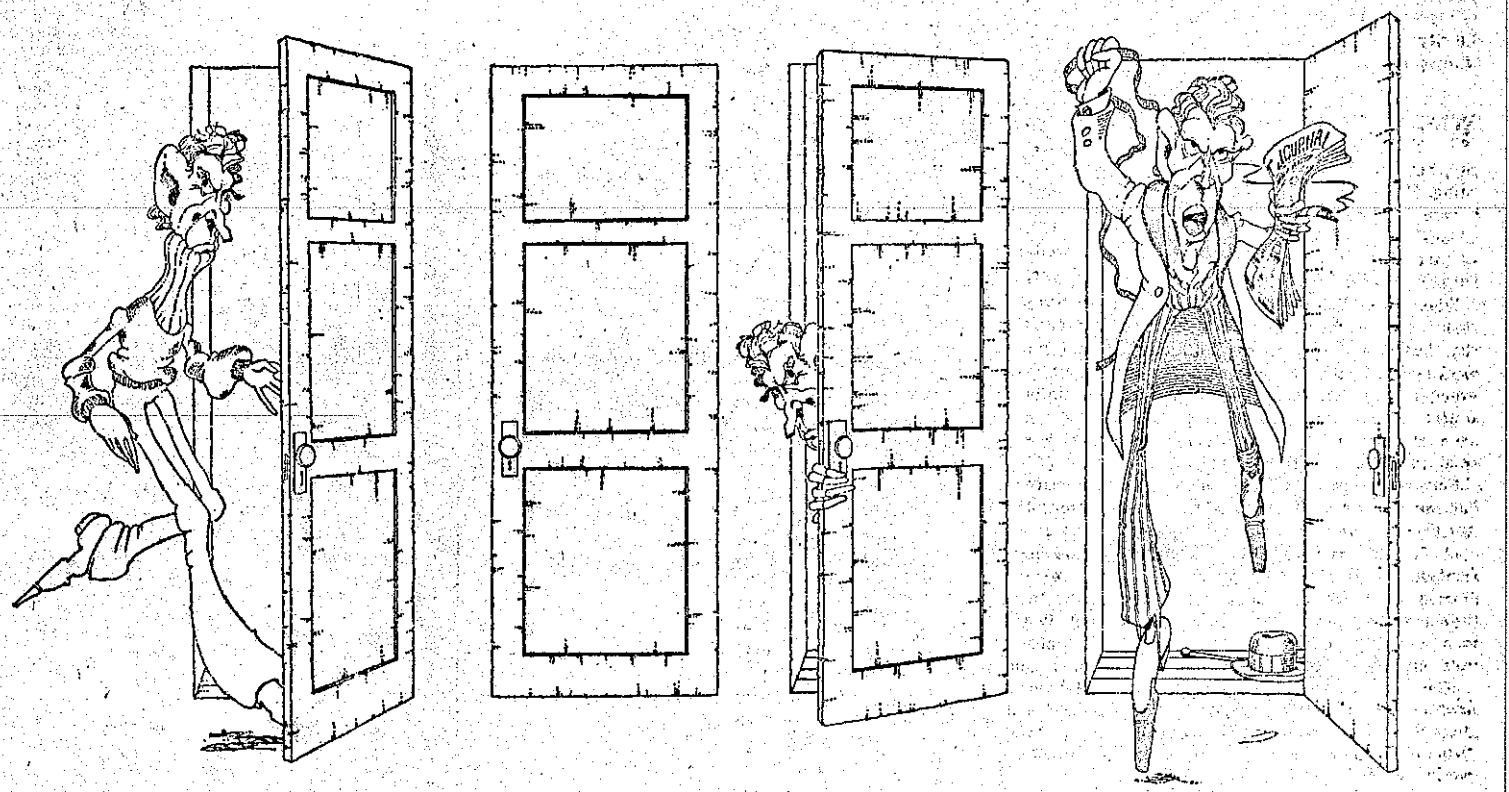
THAT'S WHEN I discovered I was an incurable and inveterate, as well as secret, sinner. I believe in sin. I'm for capitalism, modified and made intelligent and public-spirited, because it makes the world free for sinners. It allows human beings to do pretty much what they will. Socialism is a system built on belief in human goodness; so it never works. Capitalism is a system built on belief in human selfishness; given checks and balances, it is nearly always a smashing, scandalous success. Check Taiwan, Japan, West Germany, Hong Kong and (one of the newest nations in one of the recently most underdeveloped sectors of the world) these United States. Two hundred years ago, there was a China, and also a Russia. The United States was only a gleam in Patrick Henry's eye.

Wherever you go in the world, sin thrives better under capitalism. It's presumptuous to believe that God is on any human's side. (Actually, if capitalism were godless and socialism were deeply religious, the roles of many spokesmen in America would be reversed in fascinating ways.) But God did make human beings free. Free to sin. God's heart may have been socialist; his design was capitalist as hell. There is an innate tendency in socialism toward authoritarianism. Left to themselves, all human beings won't be good; most must be concerned. Capitalism, accepting human sinfulness, rubs sinner against sinner, making even dry wood yield a spark of grace.

Capitalism has given the planet its present impetus for liberation. Everywhere else they are hawking capitalist ideas: growth, liberation, democracy, investments, banking, industry, technology. Millions are alive, and living longer, because of medicine developed under capitalism. Without our enormous psychic energy, productivity and inventions, oil would still be lying under Saudi Arabia, undiscovered, unpumped and useless. Coffee, bananas, tin, sugar and other items of trade would have no markets. Capitalism has made the world rich, inventing riches other populations didn't know they had. And yielding sinful pleasures for the millions.

Six per cent of the world's population consumes, they say, 40 per cent of the world's goods. The same 6 per cent produces more than 50 per cent; far more than it can consume. No other system can make such a statement, even in lands more populous, older and richer than our own. As everybody knows, hedonism requires excess.

Look out, world! The closet capitalists are coming out. You don't have to love us. We don't need your love. If we can help you out, we'll be glad to. A system built on sin is built on very solid ground indeed. The saintliness of socialism will not feed the poor. The United States may be, as many of you say, the worthless and despicable prodigal son among the nations. Just wait and see who gets the fatted calf.



By John Twohey—The Washington Post

PATENT CHIEF

Continued from 10th Page

vironment, medicine or anything else, the more important become the incentives which patents provide."

A patent gives an inventor a 17-year exclusive right to use the invention. Last year, 104,000 patent applications were filed and 70,000 granted.

California was the most inventive state last year with 7,603 patents issued.

To some, the word "inventor" brings to mind a picture of an old eccentric holed up in his basement, but today inventing is big business. Slightly more than three-fourths of all patents issued last year were assigned to corporations. About one-third of all applications in 1974 were from foreign applicants, compared with only 22% in 1964.

Dann is disturbed that "courts are not as friendly as we wish they were" in enforcing patent protection. If a patent is in dispute it is up to the courts, not the patent office, to settle the matter.

About 1% of patents are litigated, he says, "and about half get knocked out."

Dann's office has taken an active role in promoting energy and environment-related inventions. It takes an average of 21 months from the time an application is filed until a patent is granted. But Dann has ordered priority handling of energy and environment applications, which expedites the process by eight to 10 months.

Since 1970, about 1,400 environmental patent applications have been granted priority handling, and 766 have been issued. Another 4,676 have been issued through regular processing.

Priority was given energy patent applications in October, 1973. So far out of 162 applications, 36 have been issued.

The Patent & Trademark Office has more than 2,800 employes, including 1,200 science and engineering professionals. It currently is operating on a $76 million budget, compared with $72 million a year ago.

"But most of that increase is inflation," Dann says. Fees paid by applicants cover about 40% of the patenting process, but there are bills in Congress that would boost fees to meet 50% of costs.

The office also processes about 35,000 applications for trade-marks each year and issues about 25,000. It's up to the examiner whether a proposed trademark is confusingly similar to one already issued.

Disreptuable companies which promise to help inventors get patents and practically guarantee riches are among Dann's major concerns. Most do no more than collect fees from inventors.

The Patent office has no regulatory control over these firms and can't take action against them. But the Federal Trade Commission has moved against some of them after their operations were publicized.

Dann offers this advice to would-be inventors:

"I suggest they check with the Better Business Bureau (to see if the firm is reputable), check with their banks and ask to see a list of satisfied customers—then check with the customers to see to it that they really are satisfied.

He says that a visit to a good patent attorney might be an even better move. Dann was chief counsel of the patent division of DuPont Co before he was nominated to his present post in 1973.

Dann also recommends that the budding inventor visit the Commerce Department field office in Westwood, where patent literature and market directories are available.

PAGE 2 OF 2

Ancker-Johnson airs views on technology

Commerce Department official urges early development of federal technology policy, also favors science court

Dr. Betsy Ancker-Johnson has been the Commerce Department's assistant secretary for science and technology for three and a half years, during which period she has served three successive secretaries of Commerce. In the current secretary, Elliot Richardson, Ancker-Johnson has found a particularly receptive ear.

"If you scratch, you will really find him a scientist and engineer who is very much interested and is surprisingly well-versed in questions of science and technology," Ancker-Johnson tells C&EN in a recent interview. (Richardson is a lawyer by training.) Much to her delight, he has gone to bat for her on more than one occasion. Ancker-Johnson's delight may very well be short-lived, however. This being an election year, Richardson's tenure at the Commerce Department is uncertain, and Ancker-Johnson is likely to be reporting to a new boss in a few months. Nevertheless, she is undaunted and speaks enthusiastically of the many things she hopes to accomplish.

First on Ancker-Johnson's list is the development of a U.S. technology policy. "What we have now is a whole bundle of strategies—there is no policy as such," she says. But one should be developed quickly, she adds, because indicators have shown that the health of U.S. science and technology, and especially technology, is not as good as it ought to be.



Photos by C&EN's Ling-yee Gibney

"We are not in a strong position vis-a-vis our trading partners and competitors that we have been in the past." Moreover, Ancker-Johnson points out that among the series of strategies that have been called a technology policy is the practice of compulsory licensing, which further weakens the health of science and technology. Under this strategy, she explains, "we've not only had to make technology that has been developed in some place—say General Electric—available to other parts of the private sector but to foreigners, and generally speaking, free or virtually free. So you don't have the royalties coming back to feed the R&D machine to keep it good and healthy."

Technology is an economic issue and must be scrutinized from the industry's (or commercially oriented) point of view, Ancker-Johnson tells C&EN. There are four options that she believes the Commerce Department should take immediately to foster technology and in particular technological innovation. The latter, she notes, should result in an aggregate of new methods for producing goods and services that either have not existed before or can now be supplied (as a result of innovation) using fewer raw materials, less energy, and less money.

Taking up these options will mean adding new functions to some of the six offices Ancker-Johnson heads—National Bureau of Standards, Patent & Trademark Office, Office of Product Standards, National Technical Information Service, Office of Telecommunications, and Office of Environmental Affairs. Option one has to do with the fact that "there is really no competence within the federal government (and hence, elsewhere) to analyze where we are going with the piecemeal strategies that we call a technology policy," Ancker-Johnson says. What she would like is a small analytic office set up immediate to her secretariat to analyze these various strategies.

Option two would be to promote consumer technology and to increase the Department of Commerce's ability to react to market-place desires. An example, says Ancker-Johnson, is providing a standard means of measurement such as for auto tire durability. NBS would do the technical work, and a small office would be established to handle policy matters. This way, explains Ancker-Johnson, "NBS will preserve its credibility as that absolutely neutral and absolutely reliable source of technical information and scientific information."

The third option would be to fund generic research that is too risky or expensive for any one company or industry, such as research on how to improve the wear of cutting tools. If research proves the technology worthwhile, it then can be picked up by the commercial sector. "We are not interested in funding things that are nice to know, but things that will increase productivity," Ancker-Johnson asserts. The National Technical Information Service would administer this program of generic research. It would be responsible for diffusing the technology to industry, and to state and local governments. "Technology transfer must be done person-to-person and not by shipping papers out the door," she emphasizes.



Option four would be to analyze and assess the scientific and technical implications of regulations, and their impact on development of new technology. At a time when productivity is low, and compliance with regulations—some of which may be unnecessary—is costly, it adds to "our burden of our not being as competitive in markets of other countries that do not regulate their industries as stringently," Ancker-Johnson says. "So we must avoid this helter-skelter making of laws and regulations." She cites the case of the Environmental Protection Agency's standards on sulfur oxide emissions. A well-known epidemiologist recently had told Ancker-Johnson that despite the billions of dollars worth of equipment put in by industries to control sulfur oxides, it may well turn out that the culprit is the H+ ion and it should be controlled, not sulfur oxides. Ancker-Johnson has in mind the Office of Environmental Affairs to operate this last option.

Ancker-Johnson is against the patent bill passed by the Senate. She is the chairman of the Committee on Government Patent Policy, which is part of the

White House Federal Coordinating Council on Science, Engineering & Technology. And the committee has drafted a bill that Ancker-Johnson hopes will be introduced before the close of this session of Congress. Essentially, the bill would make a "major change in patent policy," making it the practice rather than the exception for the inventor or assignee to take title to inventions made with federal funds. "This will mean that much of the technology paid for by the taxpayers now will get used by the taxpayers," Ancker-Johnson says.

As one of the sponsors of a "science court" experiment, Ancker-Johnson thinks that as the number of science and technology related issues get bigger and as society gets more and more complex, it would help to have such a mechanism as a science court. Ancker-Johnson does not like the word "court," as it implies that policies will be made when in fact all the court does is to present the facts. Unfortunately, she says, the word was picked up by the press and now it's useless to "unhinge" it.

What the court would do would be to bring in scientists and engineers with different viewpoints to debate on an issue, such as the theory that chlorofluorocarbons discharged from aerosols may be depleting the stratospheric ozone. These scientists and engineers will ask non-value-laden questions and agree to what the facts are today and what further research should be undertaken. They then would leave the decision to policy makers. The court idea is still in the discussion stage and Ancker-Johnson says that a colloquium to get public input on how to set up an experiment will be held Sept. 20 to 22 in Leesburg, Va.

The fact that she is a woman and one of the few female Presidential appointees doesn't bother her, but Ancker-Johnson admits that the Commerce Department is a male chauvinistic agency. However, she says, Richardson has done a great deal to change the tone of the agency. "If he stays around long enough, I am sure he will change it a great deal more, hopefully irreversibly," she quips. Ancker-Johnson comes with splendid credentials. She is a solid-state and plasma physicist, and has taught at the universities of California and Washington. She also has worked at Boeing, Sylvania, and RCA.

Ling-yee Gibney, C&EN Washington

GAO negative on synthetic fuels

A recent General Accounting Office report on the Administration's plan for developing a commercial synthetic fuels industry has created quite a stir on Capitol Hill. In no uncertain terms GAO concludes that federal "financial assistance for commercial development of synthetic fuels should not be provided at this time." That conclusion came as something of a shock to three House committees.

The three committees, after a year of work, had just reached agreement on provisions of a bill, H.R. 12112, providing loan guarantees for commercializing various energy technologies, with the emphasis on synthetic fuels. The full House already has rejected once a federal loan guarantee program, and fearing a repeat performance, the committees involved swiftly summoned GAO and Energy Research & Development Administration officials to the Hill last week to elaborate on or refute the report's conclusions.

The basic premise underlying GAO's negative conclusion is that the output from coal liquefaction and gasification and oil shale plants will not be competitive with domestic and imported oil and natural gas prices. GAO points out that the estimated regulated price of high-Btu synthetic gas—$2.61 to $3.02 per thousand cu ft—is about double the proposed Federal Power Commission domestic price for new natural gas. Oil produced from coal or oil shale could cost from $15 to $18 per bbl, far higher than the current $12-per-bbl price of foreign oil. Furthermore, GAO says, the development of a synthetic fuels technology would require creation of a substantial industry infrastructure to sustain it once it is in place.

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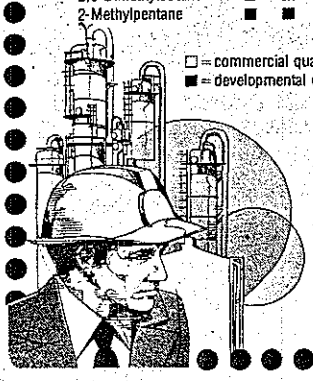
	Research	Pure 99%	Tech. 95%
PARAFFINS			
Methane	■	□	
Ethane	■	□	
Propane	■	□	□
Isobutane	■	□	□
Normal Butane	■	□	□
2,2-Dimethylpropane	■	□	□
Isopentane	■	■	□
Normal Pentane	■	■	□
2,2-Dimethylbutane	■	■	■
2,3-Dimethylbutane	■	■	■
2-Methylpentane	■	■	■
3-Methylpentane	■	■	■
Normal Hexane	■	■	■
2,4-Dimethylpentane	■	■	■
Normal Heptane	■	□	
2,2,4-Trimethylpentane	■	□	
2,3,4-Trimethylpentane	■	■	■
Normal Octane	■	■	■
Normal Nonane	■	■	■
Normal Decane	■	■	■
Normal Undecane	■	■	■
Normal Dodecane	■	■	■
Normal Tridecane	■	■	■
Normal Tetradecane		■	■
Normal Pentadecane			■
Normal Hexadecane		■	■
CYCLOPARAFFINS			
Cyclopentane	■	■	■
Methylcyclopentane	■	■	■
Cyclohexane	■	99.5	98
Methycyclohexane		■	■
cis-1,2 Dimethylcyclohexane	■		
trans-1,2-Dimethylcyclohexane	■		
Isopropylcyclohexane	■		

□ = commercial quantities
■ = developmental quantities



	Research	Pure 99%	Tech. 95%
OLEFINS			
Ethylene	■	99.8	
Propylene	■	□	
Isobutylene	■	□	
Butene-1	■	□	
trans-Butene-2	■	■	■
cis-Butene-2	■	■	■
Butene-2		■	□
2-Methylbutene-1		■	■
3-Methylbutene-1	■	■	■
2-Methylbutene-2	■	■	■
Pentene-1	■	■	■
4-Methylpentene-1	■	■	■
cis-4-Methylpentene-2	■	■	■
trans-4-Methylpentene-2	■	■	■
4-Methylpentene-2		■	■
2-Methylpentene-1	■	■	■
2-Methylpentene-2			■
Hexene-1	■	■	■
Heptene-2			■
2,4,4-Trimethylpentene-1	■	■	■
2,4,4-Trimethylpentene-2			■
Octene-1	■	■	■
mixed Normal Octenes			■
CYCLOOLEFINS			
Cyclopentene	■	■	■
Cyclohexene	■	□	

	Research	Pure 99%	Tech. 95%
DIOLEFINS			
Butadiene-1,3	■	□	
AROMATICS			
Benzene	■	■	
Toluene	■	■	
Ethylbenzene	■	■	■
ortho-Xylene	■	■	
para-Xylene	■	■	
meta-Xylene	■	■	■
1,2,4-Trimethylbenzene	■	■	■
Isopropylbenzene	■	■	■
n-Propylbenzene			■
Isobutylbenzene	■	■	
sec-Butylbenzene	■	■	■
tert-Butylbenzene	■	■	■
n-Butylbenzene	■	■	■
sec-Amylbenzene		■	■

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Patent Chief Sees Threat to U.S. Energy Technology

BY RON S. HEINZEL
Times Staff Writer

The head of the U.S. Patent & Trademark Office fears that a movement in Congress to give the government exclusive rights to patents arising from federally funded research and development programs could hamper the Administration's attempt to solve the energy crisis.

C. Marshall Dann, commissioner of what was formerly the Patent Office, a Commerce Department unit, said in an interview that President Ford's long-term energy program will largely utilize technology that has not yet been developed or commercialized.

"Now if you had a problem to solve which required inventive technical solutions, you would think that in addition to supplying whatever funds were available the one thing you would try to do would be to provide all the incentives possible."

Despite this, Dann says, "there are strong voices in Congress more concerned with dividing up the rights in whatever technology we have or may create than in providing the best climate for the creation of new technology."

Dann says the federal government currently funds more than half the research and development (R&D) programs in the United States and gets about 5% of the patents. "But it doesn't do much with them," he adds.

He says critics want:

—All inventions developed through federally funded R&D to belong to the government, excluding the contractor who did the work. "But this tends to discourage participation in government programs by the most competent organizations—the best talents aren't attracted."

—A ban on exclusive licensing of government-owned patents. "This will sometimes mean that the invention will be used by no one."

—Those taking on a government R&D contract to be required to license their privately developed patents and technology used as background for federal programs. "This tends to insure that the most competent and experienced firms won't seek a contract, since they have usually invested a great deal of money in acquiring their technology."

—Compulsory licensing of energy-related patents developed with private funds. This would let competitors share in the benefits and "provides a powerful disincentive for any private concern to do any research at all in the energy field."

The patent system in this country is rooted in the Constitution. Article 1, Section 8, gives Congress the power to "promote the progress of science and useful arts, by securing for limited times to . . . inventors the exclusive right to their . . . discoveries."

"If the patent system has any virtue and if it helps achieve the Constitutional objective, as has been supposed for 185 years," Dann says, then it is needed in the energy situation. "The more important the technological goal, whether it be energy, the en-

Please Turn to Page 17, Col. 1



THE COMMISSIONER—C. Marshall Dann, commissioner of Pate Trademark Office, believes proposed changes in U.S. patent p could have an adverse impact on nation's long-term energy prog

Times photo by Joe Ken

TO Neil Reiner

Boeing Co. P Higher Earnin

Boeing Co., Seattle, Monday reported net income of $72,432,000 or $3.42 a share for the year ended Dec. 31, 1974, up 41% from $51,215,000 or $2.38 a share in 1973.

The aircraft manufacturer said sales totaled $2,720,07[illegible]

PAGE 1 OF 2