

TRENDEVENTS

Autumn 2015

IN THIS ISSUE

This issue of TrendEvents features news about economics, water, smart homes and space, followed by information about the Technocracy concept and organization. I am pleased to announce that we have some new blood—two articles by volunteer freelance writers Justin Lazzara and Joshua Moore.

TECHNOCRACY IN ACTION

Remember to visit the **Technocracy Inc. official site** for further news and updates.

<http://www.technocracy.org>

Technocracy has a Continental Headquarters-sanctioned Facebook Group. A goal is to provide a peaceful, harassment-free zone where people interested in Technocracy can discuss issues of interest. Opinions there are those of the writers and are not necessarily those of Technocracy Inc. The *Technocracy Discussion and News* group is at:

<https://www.facebook.com/groups/1619544621624125/>

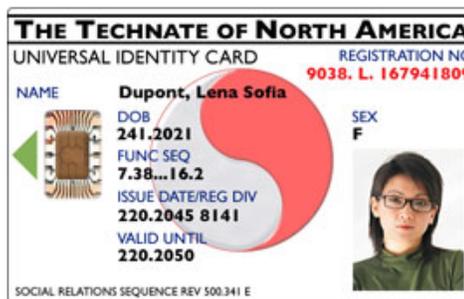
Also, Technocracy, Inc. has an official Facebook organizational page at:

<https://www.facebook.com/technocracyinc.scott?fref=ts>

The San Francisco Section will be holding online meetings for members and interested persons. Meeting information shall be posted at:

<https://www.facebook.com/groups/731694483551215/>

As always, Technocracy continues to update and improve its educational and outreach materials.



Example of an energy certificate card

IN MEMORY OF JOHN (JACK) DARVILL



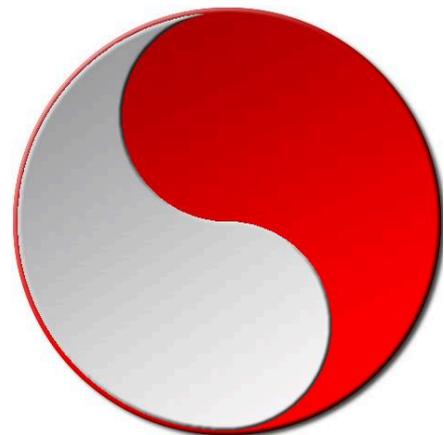
A long time member, speaker, and director of Section 1 Regional Division 12349 (also known as the Aldergrove B.C. division) died very recently. Jack was born in October, and he had just reached his 89th birthday. He leaves an amazing legacy.

Jack was even in a movie! ‘Future my Love’. The movie Future My Love focuses on the analysis of the dysfunctional price system via an old lecture from the Technocracy archives, and features John Darvill and George Wright as representatives of Technocracy Inc., at their headquarters in Ferndale, WA, USA. Technocracy was one of the first movements to propose energy certificates rather than money as a way to distribute goods and services and to account for the value of labour.

“If this system [The current economic system] was operating at maximum efficiency at the lowest possible cost, and to the greatest benefit, the system would still collapse. “

Jack was what members call a ‘die-hard’ Technocrat. He was sure that someday, the world would wake up and see that politics, greed, and money were not the way to rule the world. He would not give up trying to get Technocracy noticed and reviewed. He wanted the world to see what Technocracy has to offer. Technocracy was Jack’s work and passion.

His Grandchildren were the light of his life; Emma who is a nurse, and Ian who is a firefighter like his dad Allan.



NEWS

NANOPORES INEXPENSIVELY FILTER SEAWATER

Most humans live near oceans. Yet even in coastal communities, there are often severe water shortages. Hence, desalination of seawater into fresh water is the "holy grail" of unlimited water supply. Yet, present desalination processes require tremendous amounts of energy, making such processes very expensive.

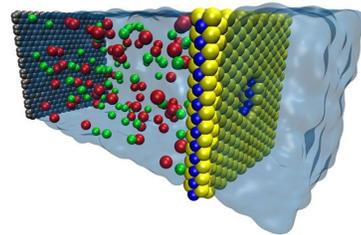
Nanotechnology has been proposed many times as the means to reduce such energy costs. Many such proposals have not gone far, but one gets the impression that sooner or later, someone will figure out how to do it. The latest such proposal comes out of the University of Illinois.

Nanotechnology involves molecular-sized structures that have special properties. Nanotechnology desalination filters have holes called 'nanopores' that allow pure water to flow while blocking salt and other contaminants.

The UI team uses a nanometre-thick sheet of molybdenum disulphide (MoS₂) riddled with these nanopore holes, and claims they can filter up to 70 percent more water than graphene.

Conventional desalination relies on reverse osmosis to channel seawater through a thin plastic membrane, where a solution such as sugared water pulls water across the filter. Unfortunately, "while the membrane appears thin to the eye, from a microscopic perspective it's more tube- or tunnel-like than a sheet that's only a nanometre in thickness", and requires

considerable pressure (and energy). In contrast, the extreme thinness of the molybdenum disulphide membrane allows water to pass through with much less resistance, thus requiring less energy.



Nanopores filter saltwater

Further, "MoS₂ has inherent advantages in that the molybdenum in the centre attracts water, then the sulphur on the other side pushes it away, so we have much higher rate of water going through the pore," said Mohammad Heiranian, first author of the study. "It's inherent in the chemistry of MoS₂ and the geometry of the pore, so we don't have to functionalise the pore, which is a very complex process with graphene."

Commentary: although many nanotechnology materials look promising, manufacturing them in scale can be prohibitively expensive. Whoever can figure out how to overcome this barrier can have a tremendous impact.

Sources:

- [Nature Communications](#), 6, Article number: 8616, 14 October 2015.
- [Science Alert](#), 12 November 2015.

Saudi Wells Running Dry of Water — End of Desert Wheat

Saudi Arabia "once grew so much of the grain that its exports could feed Kuwait, United Arab Emirates, Qatar, Bahrain, Oman and Yemen. The circular wheat farms, half a mile across with a central sprinkler system, spread across the desert in the 1980s and 1990s, visible ... as green spots amid a dun sea of sand.

"The last wheat farms have just disappeared to save the aquifers supplying them. For the first time, Saudi Arabia will rely almost completely on wheat imports in 2016, a reversal from its policy of self-sufficiency."

"The kingdom will rely on imports for "100 percent" of its wheat in 2016 for the first time."

Commentary: many farms in the midwest and western USA also depend on mined water from rapidly depleting underground aquifers.

Source: *Bloomberg* 4 Nov. 2015



Irrigation in Saudi desert (credit: NASA)

SMART THERMOSTATS GATEWAY TO A SMART HOME

By Justin Lazzara

A basic programmable residential thermostat, such as the "White Rodgers", will have multiple time slots for when to come on and off. Smart thermostats use a built-in computer to do the same thing by keeping track of when and what you set the thermostat for and looking for a pattern to set itself too. This pattern could continually change based on your continued fine-tuning. The less you need to fine-tune it the better. The "Smart Stat" determines your needs and seasonal patterns. Ideally, this should lead to less excessive use and a comfortable

environment. Some basic thermostats will do something close to this.



Learning thermostat (credit NEST)

A quick note: set points for cooling the room temperature need to be 2 degrees over the set point for cooling to kick in and will cut out

once the set point is achieved. For the heating set point, it is 2 degrees below with the same idea. A manufacturer’s video talked about the thermostat changing itself anywhere from 75°F to 80°F for the set point when the house is unoccupied. If you have animals or an expensive computer at home, you might pick 75°F or 80°F if the house is empty. For seasonal heating, a set point 68°F for the summer months and 70°F -72°F for the winter months is very cost effective. [Note: 70° F = 21°C.]



White Rodgers Thermostat (credit: Emerson Climate)

A good thermostat should keep you from setting it below 70°F degrees. The Nest and Smarthings elude to a limiting feature but does not give exact numbers. A normal air conditioning unit is not designed to operate below 70°F degrees, if you need one that does look at computer room units or a “walk in freezer”. Setting a stat below 70°F leads to a lot of service calls due to frozen coils and slugged compressors.

The Nest and Smarthings thermostats boast being able to control them from a cell phone or a computer. This is not something new. “Venstar” has been doing it for a while at an affordable price. A lot of control companies are offering systems to tie lighting and

HVAC controls into one system for the commercial and industrial market. Those same companies are starting to offer systems for the residential market.



Smart Energy Thermostat (credit: Emerson Climate)

Commentary: Is a smart thermostat worth it?

I took a look at the Nest and Smarthings thermostats to see if they are worth the cost versus a more conventional thermostat. For residential service calls, the two primary problems are not changing the filter frequently enough and not properly using the thermostat.

The huge advantage of Nest and Smarthings is as a cornerstone for a wired home. Smarthings seems to be like Apple where they only want you to buy their accessories from a few licensed outside companies. In contrast, Nest allows many different brands to work with their product. I was impressed by that a safety feature of the carbon monoxide alarm telling the gas heating system to shut down as the likely source (holes in the heat exchanger). I like Nest better as a corner stone for a smart home but am very disappointed by its HVAC qualities.

(Continued on next page)

Sources:

- Nest <https://nest.com/>
- Smarthings <https://www.smarthings.com/>
- White Rodgers Thermostats <http://www.emersonclimate.com/en-us/products/thermostats/Pages/thermostats.aspx>
- Venstar: <http://venstar.com/>

FALCON 9: A POTENTIALLY REUSABLE ROCKET

By Joshua Moore

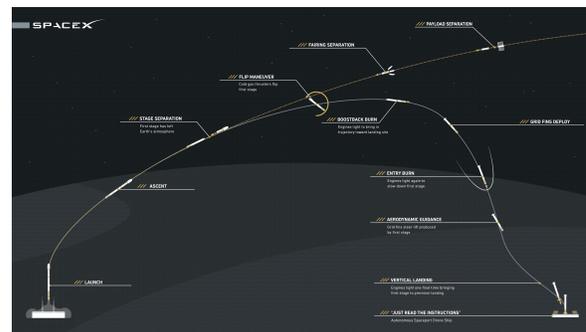
SpaceX has successfully tested the first powered-reentry and recovery of the first-stage rocket booster, a feat that described. as “launching a pencil over the Empire State Building than turning it around and landing it vertically in a shoebox” (to N.P.R)



Falcon 9 first stage landing (credit: SpaceX)

The first stage of the rocket is essentially the heavy lifter in a 2-stage to orbit launch system; providing 6,672KN of thrust and is the most expensive part of putting a commercial payload (usually satellites) into orbit. In material terms, the ability to retrieve the 1-stage boosters and refurbish them for reuse makes the process vastly more efficient compared to previous delivery systems. The Falcon 9 rocket system was

designed from the beginning with reliability and efficiency. There is a hidden story of brilliant engineering behind the major event of this landing having to do with a constant refinement of technology, The Falcon has gone through 2 refinements now form the v.1.0 to the 1.1 which featured a heavier thrust output and fewer connection points between the stages, reducing the potential points of failure in the delivery system.



Mission plan for first stage landing (credit: SpaceX)

Sources:

- <http://www.npr.org/2015/12/22/460729808/spacex-successfully-lands-rocket-after-launching-it-into-space>
- <http://www.spacex.com/falcon9>

FREQUENTLY ASKED QUESTIONS ABOUT TECHNOCRACY

CONCEPT AND ORGANIZATION (continued from a previous issue)

What does Technocracy propose to substitute for money?

Technocracy proposes to replace money — that, in all its various forms such as coin, currency, bank drafts, checks, et cetera, is a medium of exchange -- with a nonfluctuating medium of distribution. Instead of having an elastic type of "value" as at present, goods in a Technate would possess a measurable energy input and would be distributed on that basis. The total cost of all goods and services produced would be the total amount of energy used in their production. The total purchasing power is a certification of the total net energy consumed; the income of the individual in a Technate is arrived at by dividing the total adult population into the total certification of consumed energy. The cost of any one unit of production, as for instance a pair of shoes, would be the total energy required to produce all shoes, divided by the total number of pairs of shoes; this would give the cost of an individual pair of shoes. This cost would be expressed in some such scientific term of physical measurement as ergs.

Your consuming power, which would be your pro rata share of all the nonhuman energy used in producing goods and services.

What geographical area would the Technocratic society cover?

The Technocratic society, or Technate, would embrace the entire North American Continent, plus the peripheral islands north to the North Pole, the West Indian archipelago, and those in the Pacific Ocean east of the International Date Line and north of the Equator. In addition, the northern tip of South America would be invited to join, embracing that portion of the southern Continent north of the Amazon River basin.

Why is the Technate restricted only to North America?

For no reason other than that North America is a geographical and industrial unit, whereas the whole world is not. Because of intervening oceans it is not possible to integrate the river systems of the world in the way that can be done for the rivers of a continent, nor can any number of other physical feats be accomplished practically for the same reason. Moreover, it is impractical to attempt to have an impartial, world-embracing governmental control that would deal similarly with all parts of the earth; and especially has this been the case since World War II when most countries of the world have had more than their fill of political and economic interference from the Price System controls of North America. Until this Continent sets its own affairs in order, it is unlikely that any other area of the

world would be interested in any proposition that might issue from here.

Apart from the above considerations, there is a further important one: as yet North America is the only land area that, because of its fortunate supply of physical resources and because of its advanced development of the technical arts, has crossed the threshold from an environment of scarcity to one of abundance (notwithstanding certain present manifestations to the contrary) and thus has reached the point where a new distributive mechanism is not only desirable but mandatory if civilization on this land area is to survive.

What do the numbers 12349-1 mean?

The numbers 12349 represent the Regional Division in which Section 1 (Vancouver, B.C.) of Technocracy Inc. is located. A Regional Division is a quadrangle bounded by two successive degrees of longitude and latitude and the number designation is taken from the southeast corner of the quadrangle.

The whole of North America is blocked off by Technocracy into these quadrangles or Regional Divisions. In this rational services, would be issued in some form of nonnegotiable Energy Accounting. It would be identified only to the person it is issued to and would be usable only by that person. There would be no personal "saving," for the unused remainder of your account would be canceled out at two-year intervals and replaced with a new account.

How would the Technate conduct its international affairs?

International affairs of any nature would be the special concern of the Foreign Relations Sequence. As with all other Sequences, its personnel would be specially trained for

their work, having among its staff a selection of personnel who, in total, could speak most of the major languages of the world. In addition, they would be conversant with the history, geography, social mechanisms, and other pertinent characteristics of all countries they would be dealing with; in other words, the balance of the world outside the Technate area. By keeping in constant touch with world affairs, the Foreign Relations Sequence would instantly be aware of an emergency occurring in any area and so would be able to render whatever assistance it required of personnel or supplies. All such assistance would, of course, be given without any strings attached.

In travel abroad, what would be used for money?

Citizens of the Technate who plan a trip abroad would be granted the equivalent of their domestic income in foreign currency, secured by the Technate through foreign credits. Upon their return, travelers would relinquish any foreign money they might have in their possession.

How would we secure the goods that could not be produced in this continental area from other countries?

There would be no international trade for private profit as at present, but there would be an exchange of goods on somewhat of a barter basis — at present, in excess of 40% of world trade is carried out by barter — or there would be direct sale in some instances in order that the Technate might be provided with foreign currency for the use of its citizens in travel abroad. All such matters involving international relationships would of necessity be handled by the Continental

Control in conference with the representatives of other countries. The Continental Board would establish the policy to be followed in each instance, and the Foreign Relations Sequence would attend to its application.

What is this blueprint that Technocrats are always talking about?

The Technocratic "blueprint" is a scientific social design to produce and distribute goods and services to all North Americans with the least possible wastage of our natural resources, a minimum of human effort, and a maximum of efficiency. The basic design of the Technate includes an administration chart of industrial and service function, a revised calendar, a new medium of distribution, and a continental hydrology for power, transportation, irrigation, and recreation. Details of this "blueprint" of tomorrow's society are available in the Technocracy Study Course and other literature published by Technocracy Inc.

How could a Technate operate its technology and still have less pollution than there is now?

The industrial mechanism would be operated as close to 24 hours a day, 365 days a year, as possible, and the required production could thus be achieved with less but more efficient technology than at present. Also, goods would be made to last longer (no more built-in obsolescence), and this again would lessen the amount of production equipment necessary. Another prime factor would be the emphasis placed on the Technocratic society on avoiding pollution. With the removal of the Price System, the monetary cost of fighting pollution would be

eliminated and would no longer be the problem that confronts industrialists and politicians today.

Why does Technocracy use energy as the means of controlling the flow of goods and services?

Energy was chosen instead of money or price because it possesses the characteristics that a satisfactory mechanism of distribution must possess.

First, money relationships are all based upon "value," which in turn is a function of scarcity. Hence, money is not a "measure" of anything. Second, money is negotiable — it can be traded, stolen, given or gambled away. Third, money can be saved. Fourth, money circulates and is not destroyed or canceled out when spent.

The energy medium would eliminate these drawbacks and institute a balanced system of production and distribution. It would provide a continuous inventory of goods and services while allowing the citizen the widest latitude of choice in consuming his or her individual share of the Continental physical wealth.

Agriculture would be governed in its operation by the same rules obtaining in the operation of any other industrial sequence, i.e., maximum production at the least possible energy cost, involving the least possible human labor, and with the least wastage of raw materials and natural resources.

Today's small-scale farms would give way to large blocks of land, possibly as much as 25 miles square, that would be cultivated by power machinery developed for large-scale operation. It is probable that the agricultural population employed on these large tracts of land would reside in towns suitably located

where they could combine the educational, recreational, and cultural advantages of

urban life with their out-of-door agricultural pursuits.

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