



Covey Consulting Newsletter

Excellence in Engineering

September 2007

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Ed

Lost for words

Geoff Covey

As we all know the English language is continually changing. It has been changing ever since it became a recognisable language some 1500 years ago and it will probably continue to do so as long as it lasts. What we sometimes overlook is how much it changes in one lifetime. We are mainly aware of new words creeping in (like ‘software’, ‘internet’ and ‘turbocharger’) but it is less obvious to notice that some words have disappeared and been replaced by new ones. I thought I might make a list of a few words that were commonly used fifty years ago when I was growing up, but which have now pretty much disappeared from everyday usage:

Oblong – rectangle was always around, but when did it completely displace oblong? (as a child I noticed that envelopes were oblong and hence derived ‘enbleblong’ – I assume that was how it was spelt)

Naught – Zero was purely an American word (though with hindsight I doubt that physicists talked about ‘absolute naught’) ‘Oh’ was just the letter before ‘Pee’ – even when reading out a series of digits. For some strange reason though, in soccer results the score my team usually got was ‘nil’.

Mongers – by my time monger (meaning dealer, trader etc) had long been gone as separate word, but many compound forms were still used – ironmonger which sounds more heavy duty than ‘hard ware store’ especially as they sold ‘ironmongery’! Fishmonger was standard, as was Costermonger (now barrow boy), much rarer, but still to be found was the cheesemonger!



Shop – still with us but rapidly being replaced by store (which used to be a warehouse of stock-room).

Five and twenty past (or to) the hour – as a child, one would NEVER say twenty-five past, now one would never use the old form. For some reason this was the last survival of the old way of saying numbers (except for ‘four and twenty’ as in blackbirds or Australian meat pies).

Garage – by the 1950’s garage had replaced ‘motor-house’ as the building at home where you kept your car, but it also meant what we now call a ‘service station’ or ‘petrol station’.

Electric brains –were common on TV comedies and dramas in those days, until they were replaced by computers.

Mrs, Miss and Master – no I am not treading in that territory!

Esq – when I was a child, perhaps a quarter of the letters my father received were not addressed to ‘Mr W.H. Covey’, but to “W.H. Covey Esq” – rather nice really, but one addressed to “Mr. W.H. Covey Esq” displayed the ignorance of the writer!

I would love to hear other peoples’ memories of lost words.

(I made the mistake of letting Reg read this and asking for his ideas – he came up with ‘Hansom Cab’, ‘Radio Cat’s Wisker’, ‘chain mail’ and ‘toga’ as words in common use in his earlier days – he also listed some others, but I had stopped listening by then)

A MODERN APPROACH TO SOLVENT SELECTION
 Gani, R. et al.
 Chemical Engineering
 Document 0603-1E
 Solvents are used in the formulation of process media. However the issues associated with the application of solvent release solvent for a particular suggested is a four criteria definition (i.e. the criteria that the solvent to be selected must satisfy); search verification of results to ensure that the criteria. The bulk of procedures which some case studies

PROCESS WATER TREATMENT SOLUTIONS
 Cartwright, P
 Chemical Engineering vol 1
 Document 0603-1E
 Sources of process water at the types and concentrations will depend on the intended removing impurities are available and some are mutually applicable and some are mutually paper outlines the types of applicability of each type. It (to protect the primary treatment deterioration in quality during options for each stage of the discussed with indications of relative cost. The paper of the factors to be considered tables)

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PAPERS

A summary of paper industry technical articles from Covey Consulting & Appita



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No 0701

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Snippets from the amazing (well, slightly amazing) life and times of Eddie Blundstone

Amongst the more curious forms of flora and fauna ⁽¹⁾ lurking in the Covey Consulting undergrowth is a certain John Edwin Blundstone. Born - Flinders Island, 1938. A distinction in itself when you think about it.

Growing up on Flinders Island represented in some ways a deprived childhood – for instance one could only buy an ice cream once per week, when the ship came in. On top of this, Flinders Islanders during the war were deeply worried by the thought of Japanese submarines landing. “Admiral Yamamoto sir, we are deadlocked – we need to decide between Pearl Harbour and Flinders Island”

Some people claim to be educated at school, some at the school of hard knocks. According to Eddie, going to Launceston Tech combined both – it was a rough establishment in those days.

After graduating from Tas Uni, Eddie joined CIG and worked on various liquid oxygen plants in NSW, South Australia (including supply to Woomera), Tasmania, as well as overseas stints in Thailand, Hawaii, and Indonesia.

One of his fonder memories is of the Launceston show. CIG used to supply the helium for kids balloons, and they used to sneak in about 20% nitrogen to reduce the cost. This worked quite well until someone got the proportions back to front. This became known within CIG as the great ‘lead balloon gas’ fiasco.

He has somewhat less fond memories of his first day in Indonesia. CIG’s agent met him at the airport and drove him to the office, where he finished up sitting in the reception area while the agent chatted up the nice little Indonesian secretary (in Indonesian). After a while, Eddie notices that she keeps glancing at him with growing alarm. “So what were you saying to the secretary?” he asks afterwards. “Oh, I just told her you were a sex maniac”.

A humble person, he has reconciled himself to the fact that he does not qualify to join Mensa, and is thinking of starting a similar group for the intellectually challenged, tentatively called Densa.

Some of the above is hearsay, as we in Covey Consulting have lost touch with him over the last few years, apart from the odd invoice. He is apparently entrenched in an Atco at Maryvale Paper Mill, and rarely makes contact with the outside world apart from brief forays for food, and somewhat longer forays home.

Eddie now lives at Deviot on the Tamar River, north of Launceston, and also has a shack at Ansons Bay. His main visible vice seems to be his yacht. Many years ago, there was a short cartoon series on the children’s telly, featuring a cheerful and somewhat rotund bearded pirate called Captain Pugwash. This gentleman bore a quite striking resemblance to our hero ⁽²⁾, and sailed an equally rotund ship called the Black Pig. Eddie initially called his yacht the Black Pig, but detecting a somewhat cool reception from fellow yacht club members, he upgraded this to the Couchon Noir.

So, as a final tribute to Eddie, we present:

The Ballad of the “Couchon Noir” ⁽³⁾

Just a man from Flinders Isle, back to docks again,
Rolling down the Deviot Road, drunk and raising Cain:
Give the lads another drink before I go away –
I that took the “Couchon Noir” out from Ansons Bay!

Our hero encounters a storm

Trailing like a wounded duck, working out her soul;
Clanging like a smithy shop after every roll;
Just a cabin and a mast lurching through the spray –
So I threshed the Couchon Noir out across the Bay!

Racketing her timbers loose, knuckles white as snow,
All the gear adrift adeck, half the gear below;
Leaking like a lobster-pot, steering like a dray –
Out I took the Couchon Noir, east from Ansons Bay

Just a pack of rotten boards puttied up with tar,
In I came, an’ time enough, across St Helens Bar
Overloaded, undermanned, meant to founder we
Euchred God Almighty’s storm, bluffed the eternal sea!



Footnotes

1. We like to consider all our consultants as fauna, but some clients dispute this.
2. Eddie’s tongue in cheek description of his figure is ‘svelte’. This puts a greater semantic strain on the English language than it can reasonably be expected to bear.
3. With apologies to Rudyard Kipling

Reg Harvey

Scrub-a-dub-dub

Geoff Covey

Covey Consulting quite often designs pieces of equipment for our clients' plants. Recent examples have included packed towers, a semi-batch crystalliser and cyclones. This is, of course, in addition to our more normal role of designing the process into which the equipment will fit. The equipment we design is normally of a 'one-of' nature, but just recently our role has expanded to designing equipment of a more generic nature – including, odour samplers, some special heat-exchangers and solids dryers and some rather special gas scrubbers. The odour sampler was described in our April 2006 issue and in some technical papers, and some of the other items may get detailed in future issues, but this article is about our 'orifice' gas scrubbers.

There are many pieces of equipment on the market for scrubbing particles (and in some cases soluble gases) from gas streams. Most of these are fairly complex and expensive, but they generally do a very good job. The difficulty arises when handling small gas flows (less than about 20 m³/s). Although the standard devices are effective in such applications, they tend to be rather expensive and usually have more moving parts in contact with the gas stream than is desirable for 'small' applications.

Typical situations requiring such devices are bag splitter housings, dust extraction systems, vents from dust or fume vessels and small solids processing units.

For such operations we would urge you to consider our design of orifice scrubber.

The orifice scrubber is related to the venturi scrubber, but is simpler and cheaper and has a number of special features.

A pressure atomised coarse spray is introduced axially into the dirty gas stream. The gas/dust/droplet mixture is then passed through an orifice that serves several purposes:

The high velocity and degree of shear induced by the orifice serves to break up the spray drops into smaller droplets which have a larger surface area to collect particles of dust. Acceleration of the gas stream as it enters the orifice acts faster on the gas and fine dust particles than it does on the water droplets. This results in velocity difference between the components and a greatly increased collision rate between the dust particles and the water droplets.

As the mixture leaves the orifice region, it is the gas and the remaining dust particles that slow down first and this creates further opportunities for dust-droplet collisions.

Usually most collisions between dust particles and water droplets result in 'capture' of the dust. However, if the dust is poorly wetted it may be necessary to add a wetting agent to the system.



The gas borne mixture then passes along a mixing tube and into a cyclone. Cyclones are very effective for removing particles greater than 10-20 μ m (exact size will depend on the diameter of the cyclone and on how it is operated) but their efficiency falls off rapidly for smaller particles. By capturing dust with water droplets of (say) 100 μ m prior to the cyclone, its effective cut size can be greatly reduced.

The cyclone itself has a number of features to reduce short-circuiting and fouling (always a possibility when handling even dilute slurries). It discharges cleaned gas and a slurry of the captured dust particles which can be recycled to the spray or subjected to further processing as required.

The whole arrangement can be made of any suitable material (and can even be used at quite high temperatures) but for many applications polymer construction provides a light, inexpensive, corrosion resistant product. Covey Consulting has been working with Plastic Fabricators (WA) Pty Ltd to supply such polymer-based units. The photograph shows two Covey Consulting designed orifice scrubbers in Plastic Fabricators (WA)'s workshop. They have just passed their performance tests and are waiting to be crated for shipment.

Please contact us to see how we can help you with your dust and fume scrubbing needs.



The Ultimate cure for jet-lag

Dennis Shore

In its quest to unearth really useful information for its clients and associates Covey Consulting's abstracting service brings to the attention of all some really, really important information.

Covey Consulting, as much as possible evaluates carefully the veracity of information that it reports and can attest to the information presented in an article that appeared in the Economist (16 March 2007). Clearly if this information appeared in the Economist, this can only but further attest to the validity of what is reported. We have liberally



(even substantially) reproduced much of the Economist article. Readers may be aware that the USA launched an experiment to bring daylight saving time (DST) in America forward by a month. It may be a moot point whether much energy will be saved by this initiative but if the change saves lives on the road and reduces crime, then the once-off loss of an hour's sleep is a small price to pay. All the same, when the Economist correspondent stepped off an eastbound flight from Tokyo to Los Angeles with 17 hours of jet-lag, only to find himself grappling with another time-change at home, it did prompt him to ponder whether moving the clocks forward an hour in spring and back an hour in autumn was really the best way to conserve daylight.

Adjusting to the onset of DST is similar, in fact, to coping with the fatigue, disorientation and insomnia of jet-lag. It may be the equivalent of only one measly time zone, unlike the multiple zones crossed during transmeridian travel. But even so, medical experts reckon that proper adjustment requires at least one day for each time zone crossed. Don't be surprised, then, that putting the clocks forward an hour can wipe out the whole of the following day.

Not all countries bother with DST – nor, as we know do all states in Australia. Some that used to do so have since abandoned the practice. For countries nearer the equator, there's no point anyway. There's simply not enough difference between the length of their day and night. A look at a map of the world's time zones shows that countries such as Chile, Argentina and Iceland have sensibly skewed their time zones westward. Thus, instead of resetting their clocks twice a year, they have given themselves a permanent DST.

Other places such as France, Spain and Alaska have not only skewed their time zones but adopted DST as well, giving themselves effectively double DST. Britain introduced a two-hour double

NEW FROM COVEY CONSULTING

Radiata Bulletin

Radiata Bulletin is now being produced by Covey Consulting after Jo McKay has made a lifestyle move to a different country. Covey Consulting has, of course, been involved in the pulp and paper industry for many years.

John Trewick will be producing this, along with Tracing Papers, as part of the Covey Consulting publication arm.

Radiata Bulletin provides an Executive Update to the Forestry Industry and is compiled from industry contacts and other sources including Dow Jones and Dialog Newsroom.

Radiata Bulletin is available fortnightly on subscription.

Please contact John Trewick to discuss this publication, details below.



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summer time during the Second World War, allowing people to tend their vegetable patches after work and still be home before the night-time air raids began. It later experimented with year-round daylight saving time, only to abandon the idea following complaints from people in the north of the country who spent half the year travelling to and from work in the dark.

Whether it's stumbling out of bed an hour earlier in March (in the Northern Hemisphere), or struggling with the debilitating effects of jet-lag, both effects stem from disruptions in the daily cycle of lightness and darkness that the body uses to synchronise its circadian rhythm. This basic clock exists in practically all life forms from bacteria and fungi all the way up to human beings, regulating their sleeping and feeding patterns and their daily hormonal housekeeping.

In mammals, the circadian clock is located in a group of cells in the hypothalamus. These take information about the length of the day from light hitting the retina in the eyes, and pass it on to another part of the brain, where it is used to secrete appropriate quantities of a hormone called melatonin to regulate the sleep-wake cycle. Melatonin production peaks during the hours of darkness and ebbs during the day.

This has led some people to advocate taking melatonin supplements to ensure a good night's sleep and to overcome jet-lag. Others suggest tinkering with the sleeping pattern itself—for example, by skipping sleep the night before travelling and then promptly going to bed at the normal destination bedtime.

Though the effects of jet-lag vary from person to person, hardened travellers reckon that the best all-round method for getting the body's circadian clock back in sync is to set your watch to the destination time as soon as possible, drink plenty of water and eat modestly while airborne. Actually, there's a lot to be said for downing a bottle of wine. The melatonin's in most grape varieties is similar to that produced by the pineal gland in mammals—and should therefore help regulate the sleep-wake pattern of travellers.

And if there's a choice, go west young man. Numerous studies have shown that heading west, rather than east, is much easier on the body. Volunteers who have been isolated in total darkness and deprived of any sense of day or night find their circadian rhythms lengthen from 24 hours to nearly 25 hours. This appears to be the human body's

natural, unchecked rhythm. Under normal conditions, this free-running rhythm is reset daily to the Earth's rotation as the light level changes with the dawn and the sunset. Changes in daytime temperature and humidity, as well as social interactions, all help to fine-tune the body to a 24-hour cycle.

But if deprived of sunlight during a long-haul flight, the lengthened free-running rhythm syncs more easily with the longer day that results from journeying west. Heading east, the day shortens and the lengthened rhythm then has a much tougher time trying to get back in sync. If you doubt that, ask an Alaskan sports team: they are always flying east for their away games, making jet-lag their year-round opponent.

Covey Consulting Staff, many of whom in their past lives have been intrepid long-haul travellers have selflessly made themselves guinea pigs in the interest of scientific endeavour to evaluate the therapeutic benefits of wine in combating jet lag. It can be reported conclusively that copious quantities of red wine (following a glass or 2 of preferably French champagne) do indeed combat the travails of jet lag. The effect is even more beneficial if supplemented with melatonin tablets. At the very least it can be reported that if enough wine is consumed, you have no idea of whether you are jet lagged or indeed still alive!

There is a bit of a problem if you want to buy melatonin supplements in the Antipodes however. In the USA you can buy tablets everywhere because numerous best selling books have convinced our North American brethren (many of whom do not travel far anyhow) that melatonin can cure every ailment known to mankind from halitosis to hemorrhoids. Therefore the average traveller from this part of the world must accept the (red) wine option to combat jet lag – white wine will suffice if necessary.

This is surely more wonderful news. The anti-oxidants in red wine not only contribute to our resistance to a whole range of prospective fatal ailments but now we know the melatonin provides a whole raft of additional benefits, including resistance to jet lag. That's worth another glass of red!!





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