

1998 (cont.) Oct. Jaqui + Vicki visited

Nov. Trip to Japan

~~Nov. 14 Climbing J. Tree with Garrett, Simone,
Troy + Alisa~~

~~Nov. 29 Hike with Paul Jennings (Hike up Pine Creek)~~

Dec. 2 Norway + N. Ireland - ~~Alisa~~ via Phil.

Dec. 11 D. flew to Phil + we met up to
visit Rana (went to see Sadie)

~~Dec. 20 Hike up Pine Creek~~

~~Dec. 20 Hike~~

~~Dec. 27 Hike with GRS (S. Lytle Creek?)~~

xmas at SM. (Five to Eaton Canyon)

~~Jan 2 Climbing in Monrovia Canyon?~~

1998

~~Jan 17 Hike in Pasadena Glen - very late~~

~~Feb 16 - " to Strawberry Peak~~

~~Feb 28 - Hike to Mount Echo~~

~~Mar 7 - Climbing in Malibu Canyon~~

Mar 9 - D, G. ~~Alisa~~ came to visit
→ 14 Disneyland. To river.

~~Mar 22 - Hike to Mount Lowe (alone)~~

Apr. 30 - CB to Europe. M'felt, Dgn., Grenoble

Apr. 9 Dana, Bill, D, G → Sierra Madre for
→ 13 Easter. S.M., Huntington Beach
La Habra Heights

~~Apr. 18 → J. Tree with Garrett + Co.~~

~~Apr. 25 - Hike with P. Jennings~~

May 12 - Kathy moved down to H. Beach

~~May 30 - Devils Canyon Rabney hike.~~

May 31 - Colin + Diane arrived
→ June 8 19

~~May 6 June 6 - I went to Lyon~~

~~June 13 - Hike in LSA with Garrett, Troy~~

June 20 - Marcella's graduation

~~July 4 - Hike in Pasadena Glen~~

~~July 11 - Hike down Vasquez Creek~~

~~July 18 - Hike with Troy Alisa~~

~~July 26 - Trip to Mt. Charleston, etc.~~

Sep. - Grant's visit

~~Sep. 27 - Hike in Rubio Canyon~~

Oct. 4 - Stoddard Canyon w. Chancy + Troy

Oct. 11 - Mill Creek with David Wales

~~Oct 25 - Hike?~~

Oct. O'Rourke's Adam Lake

TRAVELS NOW AND THEN

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ZION NARROWS 1998

The North Fork of the Virgin River begins high on the *7000-8000ft* Markagunt Plateau in southwestern Utah, about a hundred miles north of the Grand Canyon. In these early reaches there is little that distinguishes it from hundreds of other streams that gather water from the summer thunderstorms and the winter snow melt and help irrigate the rolling hills, meadows and forests of the sparsely populated, open sky country of that high plateau. The spectacular nature of the North Fork only becomes apparent if you follow it to the edge of the plateau, where it has carved a chasm *2000ft* deep into the Markagunt and created the truly spectacular canyons of Zion National Park. For about *16* meandering miles that chasm is an incredibly narrow ``slot" canyon, in places only *20* to *30ft* wide with vertical walls rising out of sight on both sides. Later it broadens to form the wider, yet still awesomely vertical canyon visited by those who drive up from the south entrance to see Zion National Park by automobile. But to really experience the magnificence of the North Fork of the Virgin, you must venture into the narrow, storm-sculpted sandstone gorge they call the Zion Narrows. With its raging rapids, its soaring, fluted walls and hanging grottoes it is a rare and awesome place.

The best way to make this pilgrimage is to begin high up on the Markagunt Plateau, north and east of the Park, and to follow the river all the way down through the Narrows to the point where it emerges into the broader canyon of Zion National Park. Though it is marginally possible to accomplish this in one very long day hike, it is clearly preferable to overnight in the canyon. This requires a permit from the Park Service and the allocation of one of the ten small campsites that are located along a central stretch of the canyon where there are occasional spots of accessible high ground.

There is, of course, danger involved in that adventure for the storms that sculpted the Zion Narrows still occur and the slot canyons still focus the runoff and create raging flash floods that crash through the canyon sweeping all before them. The bare rock of much of the surrounding land does not absorb much water and the steepness of the terrain accelerates the runoff. And, worse still, there are miles of canyon in which there is little or no accessible high ground where hikers can seek refuge from these floods. The Park service posts stern warnings about this danger and issues flash flood alerts but these efforts cannot eliminate the risk. During a flash flood the water level rises almost instantaneously - within minutes or even seconds. The hiker must not only find high ground in any local rainstorm but must also be aware of the flood potential of quite distance storms. Thus he or she must be alert to the other signs of a possible flash flood such as rapid increase in the muddiness of the water or the roar from the upstream flow. Because of the danger in the Zion Narrows, the Park Service does not issue permits to hikers until the day before the intended hike and suspends the process when thunderstorms are imminent.

A second, less obvious danger in this adventure is the possibility of hypothermia. For more than half of the length of the hike, there is no alternative but to hike in the river itself. While this is usually no more than about a foot deep, there are places where it is necessary to wade through chest deep pools and once or twice you must swim. This means that the hiker is wet for a substantial fraction of the time (``wicking" clothing of polyester or similar material is essential) and, since the sun does not penetrate the depths of the Narrows very often, prolonged coldness can lead to serious hypothermia even in mid-summer. At other times of the year, a wetsuit is essential.

One July day in 1998, I set off to hike the Zion Narrows with Troy Sette, Clancy Rowley and John Lim. Troy and Clancy were veterans of adventure hikes in southern California and the Sierra Nevada; John was a relative novice. I left home the week before to do some hiking elsewhere in Nevada and Utah. On Monday,

July 27, I was high up on the summit of 11,918ft Charleston Peak in southwestern Nevada when I witnessed a very violent thunderstorm on the eastern horizon. The lightning of this storm flashed across the distant sky with an intensity that frightened me off the summit. But I thought little more about this common summer occurrence in the southwest until I arrived in Zion National Park some three days later, on the afternoon of Thursday, July 30. As the advance party, I had volunteered to reach Zion early in order to secure the permit from the Visitor Center in Zion National Park and to set up camp. I planned to obtain the permit for our Saturday departure, first thing on Friday morning. However, when I arrived at the Visitor Center on Thursday evening, it was disconcerting to find the following cutting from the Salt Lake Tribune prominently displayed on the notice board:

The Salt Lake Tribune, Wednesday, July 29, 1998:

Hikers Find Body Floating In Virgin River

Hikers in Zion National Park discovered the body of an apparent drowning victim floating along the north fork of the Virgin River on Monday night. Officials believe the man had been hiking in the southwest Utah park along the Narrows, a canyon through which the north fork of the river runs, when he was swept away by swift currents caused by a flash flood Monday afternoon. About 14 hikers, stranded by the flood, saw the body floating down the river and recovered it Monday evening. Early Tuesday morning, the group was able to hike out of the area and told a park ranger about the body, said Denny Davies, a park spokesman. The National Park Service Search and Rescue squad carried the body out Tuesday, but investigators were unable to immediately identify the man. "There was no identification on the man, and we haven't heard any reports about a missing person," Davies said. Washington County Sheriff Glenwood Humphries said the body had been badly beaten by rocks in the river. The man is described as a male in his 40s between 230 and 250 pounds.

Davies said the north fork of the Virgin River rose about three feet due to the torrential rains that hit the area Monday afternoon. He estimated the river flows increased from 110 cubic feet per second to 740 cubic feet per second by 7:30p.m. The Narrows was named because the canyon narrows to between 20 and 25 feet in some areas. Park rangers have warned it is dangerous to hike in the area when flood potential is high in July and August. "Because the canyon is so narrow, there are not a whole lot of escape routes when there is a flash flood," Davies said. National Weather Service meteorologist Bill Alder said Zion National Park headquarters received .47 inches of rain late Monday afternoon, while Lava Point area, just west of the Narrows, received about .37 inches.

The Salt Lake Tribune, Thursday, July 30, 1998:

Second Body Pulled From Virgin River

Searchers pulled the body of a second California man from the north fork of the Virgin River in Zion National Park Wednesday where a flash flood apparently swept both men to their deaths. The body of Ramsey E. Algan, 27, Long Beach, Calif., was located Monday evening by several stranded hikers. The group was able to hike out the next day and alert park rangers. Wednesday morning, about 1 1/2 miles upstream, the body of Algan's hiking partner, Paul Garcia, 31, Paramount, Calif., was found by search and rescue workers. Both men had apparently been hiking along the Narrows, a slot canyon in which the north fork of the river runs, when they were swept away by swift currents caused by a flash flood Monday afternoon. Officials had no idea that Algan had a hiking companion until late Tuesday night when officials found the victim's car, said Denny Davies, park spokesman. "Rangers found an unlocked car with two wallets inside, which contained both men's identification," he said. Later, other hikers who had been in the Narrows and survived identified Algan from his license photo. The same hikers also said another man who fit the description of Garcia was with Algan before the rainstorm hit. A search was initiated Wednesday at 11:20 a.m. The body was caught in the river's debris, Davies said. He said the north fork of the Virgin

River rose about 3 feet due to torrential rains Monday afternoon. He estimated the river flows increased from 110 cubic feet per second (CPS) to 740 CPS later that night. National Weather Service meteorologist Bill Alder said Zion National Park headquarters received .47 inches of rain late Monday afternoon, while Lava Point area, just west of the Narrows, received about .37 inches.

The Zion Narrows route is a rugged 16-mile hike in a narrow canyon 800 to 1,000 feet deep. About half the hike is through the river itself. Park Managers have cautioned people that they should avoid hiking when flood potential is high, especially during July and August. Hikers are also strongly urged to get updated weather information in any narrow or slot canyon, particularly when afternoon thunderstorms threaten. "We cannot stress too strongly that visitors need to heed these flash flood warnings and plan alternate trips that don't include slot canyons," said acting superintendent Eddie Lopez. These are the first fatalities in Zion National Park this year. Alder said since 1950, there have been 22 flash flood fatalities in Utah.

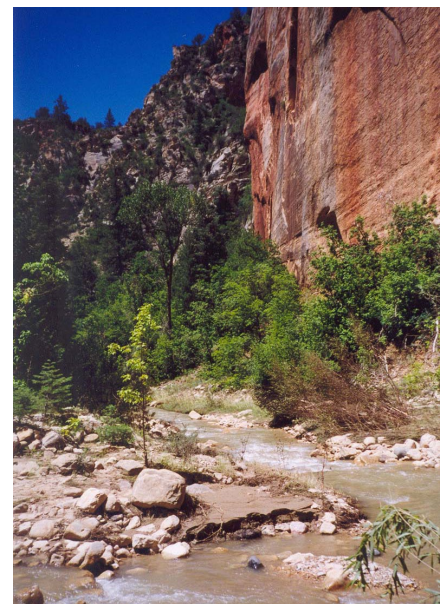
I suspect that these press clippings and the whispered conversations they produced resulted in the very short queue for permits when the Visitor Center opened at 8.00am the following morning. I was second in line behind two men and a woman who had hiked the Narrows the previous year and were returning to do so again. That was reassuring. Behind me came several men bound for the other popular wilderness hike known as "the Subway", followed by an easterner called Neal Litman who intended to hike the Narrows with his wife and two children. That sounded a dubious proposition to me and subsequent events were to confirm this instinct. But at the time I was too intent on our own plans to dwell on the intentions of others. When my turn came, I was duly warned of all the dangers, told where I could park and where I could not and was issued a permit for the Zion Narrows hike. In the process, I was allocated one of the twelve numbered campsites in the Narrows and chose Number 7, Boulder Camp. Late that evening, Troy, Clancy and John arrived and we were ready for our Zion adventure.

We arose at dawn the next morning and sorted out our equipment, trying in the process to minimize our backpacks while ensuring that we were equipped for all eventualities. Since the weather forecast indicated little chance of rain (and therefore the posted flash flood warning was low) we decided not to carry a tent but to rely on a large groundsheet for emergency cover. Preparations complete we set off up the road into Zion Canyon. That road ends at a spectacular amphitheater known as the Temple of Sinawava, a busy and popular place for visitors to the National Park. Many of these tourists park and then walk along the asphalt trail called the Riverside Walk that penetrates another mile into the Virgin River Narrows. The trail ends where the river fills the canyon, but many of the more adventurous wade further upstream, some for several miles to the truly awesome section of the Narrows.

But we had a more ambitious objective and therefore, after parking and securing my Mitsubishi Montero near the Temple of Sinawava, we loaded all our packs into Troy's Nissan Pathfinder and headed back down the Zion Canyon Road. At a road junction in the Park we turned left and headed eastwards bound for the trailhead in Chamberlain's Ranch on the Markagunt Plateau to the north and east of the Zion National Park. This 1.5hr drive begins as the spectacular Zion-Mt.Carmel Highway climbs the east wall of the Zion Canyon before exiting the Park. About 2.5m beyond the East Entrance to the Park, we turned north on a paved road that changes to dirt after several miles. The road winds its way across the plateau and then descends to cross the Orderville River, climbing again and cresting a ridge before descending to a bridge that crosses the North Fork of the Virgin River. The distance from the main highway to this bridge is about 18m. The dirt road turns right after the bridge, but we turned left and, after 0.25m arrived at the gate to Chamberlain's Ranch. The owners are kind enough to let hikers pass through as long as they are careful to close the gate behind them. After this, it is another 0.5m to a rough parking area at the trailhead situated just before the road fords the river.



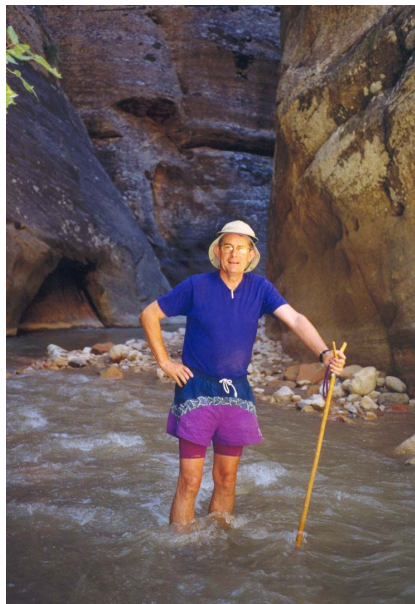
Bullock's Cabin



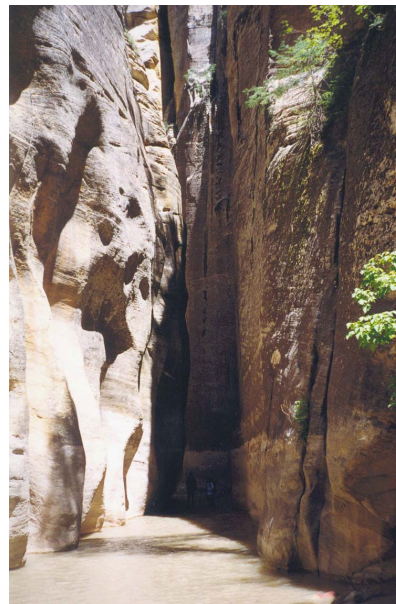
Upper Canyon

It was a beautiful, crystal clear day on the high plateau and our spirits soared with the expectations of a new adventure. The remote ranchland on which we found ourselves was delightfully bucolic, a gentle river valley with a stream and rolling pastures surrounded by low, tree-covered ridges. Soon we were ready and strolled easily along the rough dirt road as it paralleled the North Fork on the route westwards. About *50min* from the start we passed an old wooden structure, Bullock's Cabin that may have once served as home to some proud pioneer but had long since been converted to a shelter for the ranch cattle. Soon the pastureland and the road ended and the valley sides began to close in as the Virgin River cut more deeply into the Markagunt Plateau. This stretch provided a beautiful and serene hike on a lovely summer day. A well-worn use trail made progress easy though the river crossings increased in frequency and difficulty.

Two and a half hours from the trailhead we heard voices ahead of us and soon came upon Neal and Kathy Litman and their children, Jackie (aged *11*) and Ben (aged *8*). They were enjoying a rest beside the stream. Having taken the *6.30am* shuttle bus from Zion Lodge to the trailhead, they had started hiking about an hour before us. They seemed to be enjoying the surroundings as much as we were though Neal's apparent difficulty with his water filter was a worrying omen. Experience had taught us the critical importance of water filters in the deserts of the southwest and so we carried at least two. We learnt that the Litmans were from the east coast and that they had been planning this trip west for a long time. I wasn't at all sure that they realized the magnitude and lack of forgiveness of the western wildernesses. And I suspected that it would not be the last we saw of them; I learnt that they were bound for Camp 9 and made a mental note to make sure they passed our Camp 7 later that day.



Entering First Narrows



First Narrows

Soon the walls became vertical and the valley was transformed into a classical "slot" canyon with fantastic sculptured walls and cool grottoes. Three hours from the trailhead, we found a very pleasant, sunny bench for our lunch stop and, in no hurry, took some additional lazy time to enjoy the marvellous surroundings. As we did Neal and Kathy and the kids repassed us moving at a good pace. Clearly they were practiced hikers even though they were now in a new and different land. And so, when we resumed our hike at a leisurely speed they kept pace with us. Shortly thereafter (3.5hrs from the trailhead) the width between the walls closed in so that, in places, they were as close as 20ft. We had arrived at the first narrows. Experience in other canyoneering adventures had taught us that such narrowing was almost always accompanied by waterfalls and places where progress downstream required climbing. But, with a few modest exceptions, this was not the case in this Zion canyon. For much of the way, the river occupied most of the width of the canyon bottom and the sediment carried by its frequent flash floods is apparently sufficient to even out the longitudinal grade to one that only produced small cascades. And even these seemed temporary having been formed by logjams.

About 5hr from the start we came across just such a logjam that was easily climbed. It was somewhat disconcerting that Neal and Kathy were initially somewhat intimidated by this obstacle that seemed a minor one to us. Perhaps it was the pool downstream of the jam that alarmed them since, given the murkiness of the water, it was not possible to tell how deep the pool was ahead of time. They seemed reassured when we helped escort the kids through this obstacle.

Just a short distance downstream we came upon the only substantial waterfall on this hike, a vertical drop of about 15ft in a very narrow section. Fortunately, a crack in the rock off to the left provided an easy passage around this otherwise difficult hurdle. By now it was becoming apparent that the experience Troy and I had acquired navigating routes down wilderness canyons was going to be valuable to the whole group and that without such experience, the hike would be much more difficult and time-consuming. And so we naturally fell into a mode in which Troy and I would take turns leading the group and exploring ahead for the best route through the boulder-strewn cascades and the deep pools.



Waterfall



Near Deep Creek junction

It was about this time in mid-afternoon, that I began to notice John falling behind us despite the slow pace set by the Litman family. Soon it was evident that John's lack of hiking experience was going to be a problem. Despite his youth and his soccer-playing fitness, his legs, unused to travel over such rough terrain, were giving him considerable difficulty. Indeed, his pace slowed so dramatically that the Litman family began to pull ahead of us and we had to relieve John of his backpack. Troy and Clancy carried most of the added burden. We fashioned two walking sticks for John and treated his pain with Motrin. In this adjusted mode we soon caught up with the Litman family again. I had no doubt that Troy, Clancy and I would make it through the Zion Narrows; however, I was beginning to wonder if we could carry all the others with us.

Shortly after the waterfall, we came upon the woman and two men who had been in front of me in the Visitor Center queue and who had travelled on the 6.30am shuttle with the Litmans. Having come this way before, they seemed relaxed and comfortable. Together we arrived at the readily recognized junction where Deep Creek joins the North Fork from the right. Here we paused at the relatively broad beach in the middle of this cathedral-like junction, towering vertical walls on all sides. Just upstream of this point we had swum through a deep pool and so we needed a moment to warm up especially since the light and the warmth in this deep recess had already begun to wane at the end of the day. It was now 6.5hr since we had set out from the trailhead.

Deep Creek has a significantly larger volume flow rate than the North Fork and so the river downstream of the junction is notably deeper and harder to hike through. By now both John and the Litman kids were beginning to show signs of serious distress. However, the goal for the day was within striking distance. The numbered campsites begin at the Deep Creek junction. Number 1 lay in a slight rise just to the south and we could count our way down as we approached our assigned spot. About 40min later we passed the junction where Kolob Creek enters from the right and just a few minutes later arrived at our campsite, Number 7 or "Boulder Camp." Unlike some of the earlier camps that did not seem high enough above the river for comfort, Boulder Camp was up a wooded slope, a reassuring 20ft or more above the river. A very comfortable site, it also included a large overhanging rock that would provide ample shelter in case of rain. A deer was sitting only yards from our site and seemed quite undisturbed by our presence. And, in addition to the small flat area intended as Number 7, there was another cleared area just a few yards away. When the Litmans struggled by a few minutes later, I suggested that they should stop at this ancillary campsite instead of continuing on to Number 9. They jumped at the chance to spend the night close to us.

And so we all prepared for the night at Boulder Camp. We spread our lightweight tarp out under the overhang and were therefore well prepared for any change in the weather though none seemed likely. Our sleeping bags would keep us plenty warm. On the other hand the Litmans had chosen to bring a tent but no

sleeping bags, fearing rain more than cold. I think they spent a miserable night huddled together in their tent. We were able to help them with our water filter and gave the kids some snacks. Indeed the kids seemed to gravitate toward our camp, drawn perhaps by the sense of security generated by our confident demeanor. Except, of course, for John though he was recovering a little with rest and food. We ate much spaghetti followed by fruit, other snacks and, needless to say, hot chocolate. Thus warmed, we slept well in that deep recess in the earth.

Shortly after sunrise the next morning, we had eaten breakfast and packed up ready to resume our adventure. The family had little left to eat and so I gave each of the kids a poptart and cheered them along. We left camp as a group about *7.00am*.

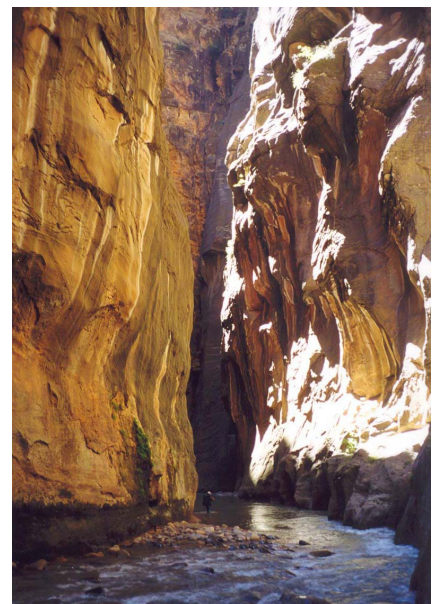
Downstream of Boulder Camp the canyon becomes quite rugged. Regular stretches of white water required a practiced eye for navigation so Troy and I took turns leading the pack. We passed each of the other numbered camps, encountering in Number *10* ("Alcove") yet another struggling hiker, a young man with a badly sprained ankle. But we had more than enough on our hands and he had a number of companions to help him. And so we did not volunteer any help. Finally we passed Number *12* ("High Camp") and, *300yds* later arrived at Big Springs, a notable feature in which a very substantial stream issues from springs in the right canyon wall. Ferns and other greenery adorn these springs and make it a pleasant place to stop. We reached Big Springs about *1hr 30min* after our morning start.

Up to this point, though the towering walls soared over *2000ft* above us on all sides, there were still occasional places where the canyon widened and small, sloping benches of trees and ferns were scattered along the sides of the river. Often these provided the easiest route of passage downstream. More importantly, they would serve as refuge in the event of thunderstorms or flash floods. Indeed, like all the other overnight sites, Boulder Camp had been situated on such a sloping, wooded bench. However, downstream of Big Springs, the canyon walls close in even further and the river and its gravel beds fill the entire width of the base of the slot. For more than three miles there are no benches on either side. No greenery, no refuge, and no sunlight except for a few minutes around noon. Just awesome vertical walls, running water and the gravel it carries with it. Even in mid-summer when the desert high above boils in the midday sun, down here in the depths of the Zion Narrows it is cold and wet and you must keep moving to prevent hypothermia.

We left Big Springs as a group a little before *9.00am* and began our passage through this most dramatic section of the Zion Narrows. Because the risk of unexpected thunderstorms and flash floods is least during the morning hours we felt comfortable with our timing, especially since we could make out a strip of clear blue sky high above us. Both John and the children were already beginning to show signs of weakness and cold and so we kept moving at a brisk pace. Inevitably though, Troy or I would find ourselves far ahead of the pack and have to pause to allow them to catch us. Clancy, Troy and, to a lesser degree, myself were still carrying all of John's pack as well as helping the children with the deep wades and few swims. But, above all, it was a truly awesome place and the memory of that majesty will always be with me.



Big Springs



Zion Narrows

It took a little over *2hrs* to travel through the heart of the Zion Narrows. In all that time, we had no direct sunlight. But, just upstream of the junction with Orderville Canyon, the Narrows widen a fraction and, on the inside of a lefthand turn, we came to a marvellous sunlight beach where we stopped to warm ourselves, to rest and to snack. John was really struggling on his two walking sticks and limped onto this beach about *10min* behind the rest. The children already seemed rejuvenated by the sun. And, a few minutes later, we encountered the first hikers coming upstream from the Temple of Sinawava; they had set out early that morning to explore the Narrows from below. That was heartening for it meant that we had only a little over *2hrs* of hiking ahead of us. More disconcertingly, a young man and woman came downstream and voiced concern about people they had encountered the previous day. Those people had started late because they rode from Zion Lodge to Chamberlain's Ranch on the *9.30am* bus. Two of these people, it was reported, had baulked at the log jam like the Litmans. Moreover, they had not shown up at their campsite in the evening. The young couple wanted us to report this to the rangers. Consulting privately later, Troy and I decided that there was insufficient cause for alarm. Surely, changes of plans like this must happen every day; most of the hikers we encountered had seemed unprepared for the ruggedness of this western wilderness. And it was perfectly possible to hike back to Chamberlain's Ranch from the location of the logjam.

About *11.20am* we left our sunny beach and plunged again into the shade of the Narrows. Almost immediately we encountered the junction with Orderville Canyon, a narrow slot entering on the right. The previous day we had crossed the upper reaches of Orderville on our drive to Chamberlain's Ranch and the descent of Orderville Canyon is another adventure to which we will return someday. And so I was not inclined to explore upstream into Orderville but pressed on downstream. Shortly thereafter, Troy, Clancy and I conferred. Since, more and more people were appearing from downstream and help would be available if needed, we decided that Troy and I would press on ahead leaving Clancy to accompany John and the Litmans at their pace. This would allow Troy and I to drive back to Chamberlain's Ranch to collect Troy's vehicle.

A short distance downstream of Orderville junction, the canyon broadens a little and the wooded benches appear again. Sunlight penetrates and it is a beautiful hike downstream to the point where the concrete Riverside Walk ends. Now there were crowds of people enjoying the canyon and the adventure of a short hike up into this wilderness. The sun and the beauty stirred my soul and my bones and the pack seemed to lighten on my back as I walked that last mile behind Troy. When we reached the Riverside Walk at *12.20pm* we shook hands, communicating our shared pleasure in another marvellous adventure.

We drove uneventfully to Chamberlain's Ranch and there parted company. I was bound for the east to hike

in Bryce Canyon. Troy drove back into Zion to collect Clancy and John at the Temple of Sinawava. I was only later to confirm that all ended well for both John and the Litmans. But I often wonder if either realized how narrow their margin of safety had been during those days in the Zion Narrows.....

*Last updated 7/30/99.
Christopher E. Brennen*

TRAVELS NOW AND THEN

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FRANCE 1998

Mon/Tues. Mar.30/31, 1998

Fly UA 934 from LAX to LHR

Fly Aer Lingus 375 from LHR to Shannon (SNN)

Thurs. Apr.2, 1998

Fly Aer Lingus 112 from Shannon (SNN) to BFS

Mon. Apr.6, 1998

Fly BD 83 from BFS to LHR

Fly BA 334 from LHR to ORLY, France

Fly Air France 7424 from ORLY to Grenoble, France

Third International Symposium on Cavitation, Grenoble, France, Apr. 1998.

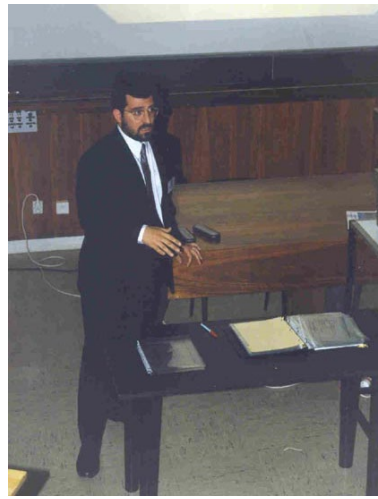
Brennen, C.E., Colonius, T., and d'Auria, F. (1998). Computing shock waves in cloud cavitation. Proc. CAV98 Third Int. Symp. on Cavitation, Grenoble, France, 287-294.



Organizing Committee and Symposium Dinner



CEB and Joseph Katz



Yoshi Tsujimoto and Steve Ceccio

Fri. Apr.10, 1998

Fly Air France 7429 from Grenoble to ORLY

Sat. Apr.11, 1998

Fly BA 333 from ORLY to LHR

Fly UA 935 from LHR to LAX

Sat. Apr.11, 1998

Fly UA 960 from LAX to SFO

Fly UA 960 from SFO to Charles de Gaulle, Paris

Sat. Apr.11, 1998

Fly Air France 7644 from Charles de Gaulle, Paris to Lyon (LYS), France

Invited lecture at Third International Conference on Multiphase Flows, Lyon, France, Jun. 1998.

Sat. Apr.11, 1998

Fly UA 961 from Charles de Gaulle, Paris to SFO

Fly UA 2045 from SFO to LAX

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Last updated 7/30/99.

Christopher E. Brennen

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JAPAN 1998

Sat. Nov 1, 1998

Fly UA817 from Los Angeles to Kansai International Airport.

Sun. Nov 2, 1998

Arrive Osaka

Mon. Nov 3, 1998

Workshop on unsteady turbomachinery forces at Osaka University

Tues. Nov 4, 1998

Workshop on unsteady turbomachinery forces at Osaka University

Wed. Nov 5, 1998

Visit to Himeji Castle



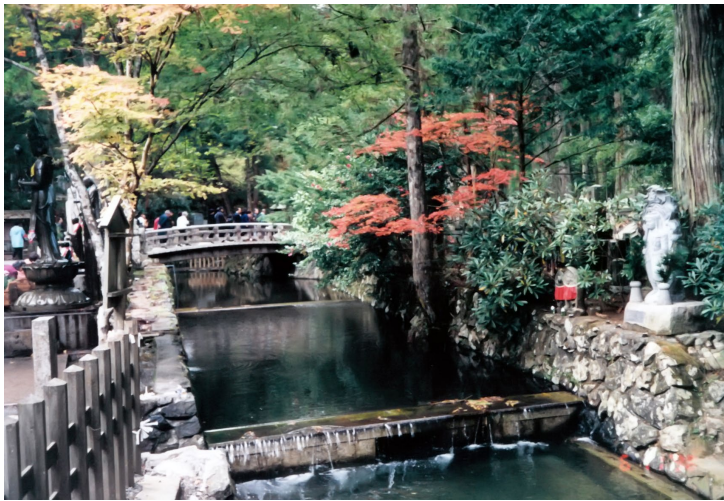
Workshop group at Himeji Castle.

Thurs. Nov 6, 1998

Visit to Koyo with Yoshida and family

Drove on to coast and to Kawayu Onsen, Wakayama

Stayed in Kawayu Onsen, Wakayama



In Koyo, Wakayama, Japan



In Koyo, Wakayama, Japan



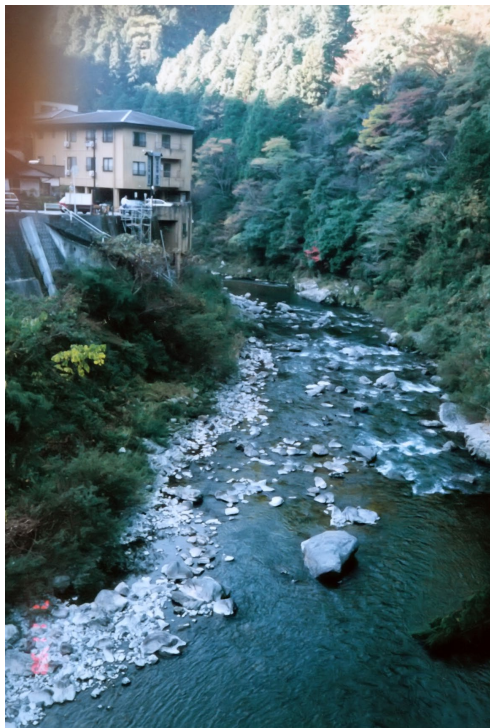
With Yoshida family on the way to Kawayu Onsen, Wakayama

Fri. Nov 7, 1998

Stayed in Kawayu Onsen, Wakayama



At Kawayu Onsen, Wakayama, with Yoshidas



At Kawayu Onsen, Wakayama, with Yoshidas

Sat. Nov 8, 1998

Drove from Wakayama back to Kansai International Airport. Flew UA818 from Kansai International Airport to Los Angeles.

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NORWAY 1998

Dec 2	Wed	Fly to Augusta. LAX-ATL DL266 11.50am- 7.05pm ATL-AGS DL4044 8.05pm- 9.00pm Stay in Hampton Inn, Aiken, South Carolina. 803-648-2525
Dec 3	Thu	Westinghouse SRS, Reid Peterson, 803-725-5276 Fly to Baltimore AGS-ATL DL?? 5.30pm- 6.33pm ATL-BWI DL?? 8.15pm- 10.01pm Stay at Collonade Inn, near Johns Hopkins Univ., Baltimore
Dec 4	Fri	Johns Hopkins University, Prof.A.Prospereetti, ME Dept. Amtrak from Baltimore-Philadelphia 5.36pm-6.41pm? Stay with Dana O'Brien, 215-482-6579
Dec 5	Sat	With Dana Amtrak from Phil-Newark 4.45pm-5.44pm? Taxi form Amtrak to Newark airport Fly to Trondheim, Norway
Dec 6	Sun	EWB-OSL SK4540 7.20pm-8.30am OSL-TRD BU112 9.30am-10.25am Stay in Royal Garden Hotel, Trondheim, (47)-73521100
Dec 7	Mon	Special Lecture. Prof. Maurice White. Stay in Trondheim
Dec 8	Tue	Torbergesen Exam. Stay in Trondheim
Dec 9	Wed	Fly Trondheim-Belfast TRD-CPH SK845 6.40am- 8.15am CPH-LHR SK501 9.00am-10.00am LHR-BFS BD84 11.10am-12.30pm Rental Car in Belfast. Stay with Muriel Brennan, Magherafelt, 011-44-1648-32311
Dec 10	Thu	Magherafelt
Dec 11	Fri	Fly Belfast-Philadelphia BFS-LHR BD87 1.20pm-2.30pm LHR-PHL BA69 4.00pm-7.10pm Meet Doreen who flies LAX-PHL UA26 1.45am- 9.44pm Stay with Dana O'Brien, 215-482-6579
Dec 12	Sat	With Dana O'Brien, 215-482-6579
Dec 13	Sun	Fly home PHL-LAX UA29 6.00pm-8.52pm

**Dana - here is my itinerary for the Norway trip - perhaps
your people could give me an estimate on it:**

Note that my United Airlines frequent flyer number is 00024188450 and that I will want credit on the UA flights as well as the SK and BD flights. Also I think I can get UA credit on the DL flights (I also have a Delta frequent flyer number 2104897984, an American number HJL7276 and a Northwest number which I don't have at hand but I can get)

Dec 2	Wed	Fly LAX to Augusta LAX-ATL DL266 11.50am- 7.05pm ATL-AGS DL4044 8.05pm- 9.00pm
Dec 3	Thu	Fly Augusta to Baltimore AGS-ATL DL?? 5.30pm- 6.33pm ATL-BWI DL?? 8.15pm- 10.01pm
Dec 5	Sat	Fly Newark to Trondheim, Norway EWR-OSL SK4540 7.20pm-8.30am
Dec 6	Sun	OSL-TRD BU112 9.30am-10.25am
Dec 9	Wed	Fly Trondheim to Belfast, Northern Ireland TRD-CPH SK845 6.40am- 8.15am CPH-LHR SK501 9.00am-10.00am LHR-BFS BD84 11.10am-12.30pm
Dec 11	Fri	Fly Belfast to Philadelphia BFS-LHR BD87 1.20pm-2.30pm LHR-PHL BA69 4.00pm-7.10pm
Dec 13	Sun	Fly Philadelphia to LAX PHL-LAX UA29 6.00pm-8.52pm

**In addition I will be getting a free ticket for your mother
as follows:**

Dec 11 Fri LAX-PHL UA26 1.45am- 9.44pm
Dec 13 Sun PHL-LAX UA29 6.00pm-8.52pm



Trondheim, Norway



Trondheim, Norway

[Back to table of contents](#)

Last updated 7/30/99.
Christopher E. Brennen

Aug 10th 198

Dear Muriel,

I can't tell you how often I have thought of you since our visit to Magherafelt. I had intended to write to you long before this, I can't believe that almost seven months have gone by.

I sold my house two days after I returned home and had the closing in May so it was a very busy time filled with very mixed emotions. I am now renting until I find something a little smaller and more manageable to buy — most of my furniture is in storage so I feel as though I'm living out of a suitcase!

It was absolutely wonderful to see you again after all these years you're hardly changed at all and still have that twinkle in your eye! Bots + Edie were so supportive and kind + thank you for the

lovely lunch.

I had a beautiful letter from Chris + I have read it many times when I have been feeling down. My heart goes out to him and to all of you for the tragedy you have been through. I miss Mum each and every day but I am so grateful that she was able to lead such a full + wonderful life.

On a happier note I have two new grand-daughters. Alexandra is 10wks old and is the daughter of my youngest child Kerri and Riley is 5wks old and she is the daughter of my second oldest Kim. I am going to spend Christmas in Australia this year so will get to see Riley for the first time.

I hope this finds you happy + well + next time it's our turn to take you to lunch!

With much love + best wishes

Suzana.



CALIFORNIA INSTITUTE OF TECHNOLOGY

Christopher E. Brennen
Vice-President for Student Affairs
and Professor of Mechanical Engineering
Mail Code 108-31, Caltech, CA 91125
Tel: 626-395-6321
Fax: 626-577-4215
e-mail: brennen@caltech.edu

~~December 28, 1998~~

JAN 1998

Barbara Angliker
56 Union Street
Guilford
CT 06437

Dear Barbara,

First let me express my sincerest condolences to you on the passing of your mother whom I remember most fondly. In particular I remember her kindness, especially for some of my more eccentric behaviours. I also remember her marvellous style and grace. While my distant words cannot help ease your pain, it may help to know that my thoughts are with you. Most of all I wish you the strength to push past your grief to aid others who need your comfort.

You will have learnt that Doreen and I lost our only son, Patrick, about a year ago. I remember him as a beautiful blond eagle, who visited my life all too briefly but left a legacy of love and friendship which will last all our lifetimes. And so when I see an eagle or hawk (and they often soar above the graveyard where he is buried) I think of him keeping an eye on me to ensure that I continue to minister to those he loved. I can only wish for you some of the same kind of positive remembrances of your mother.

On a happier note, I was delighted to learn from my mother that you took time to visit her during your sad journey back to Magherafelt. Let me express my sincerest thanks to you (and to Alison) for your kindness in doing so. My mother always remembers you with great fondness (as do I). She couldn't wait to call me to tell me all the details.

With very best wishes for 1998,

Christopher E. Brennen

July 27, 98

Dear Dr. Brennen,

I hope you are well. I hope you are getting adapted well with your vice-president duties. Things for me are very good. I am all settled in. I found a nice apartment near school and I am working full load in my new project. People at Cornell have treated me very nicely. Don Koch is a very good guy. He is slightly strange sometimes but nothing out of the ordinary. He is very smart, he knows what he is talking about. I'm glad to be working with him.

My new project is challenging. The experiment itself is difficult and also there is a lack of - good experimentalists in the department. I have found some difficulties trying to use the machine shops and trying to get advise on specific lab questions. Caltech was superior in that respect. I think is good for me to get a taste of the real world. Now I know what people mean when they say "nothing is the same after Caltech."

80 FS July
I'm including a couple of pictures that I took during the graduation ceremony. It was very nice to see you there.

I just want to tell you that I feel privileged of having been part of your research group. Your advise and guidance were of great importance for me. Thank you.

I will be back to Caltech for the month of September. There are a few things that need to be finished. I hope to see you then.

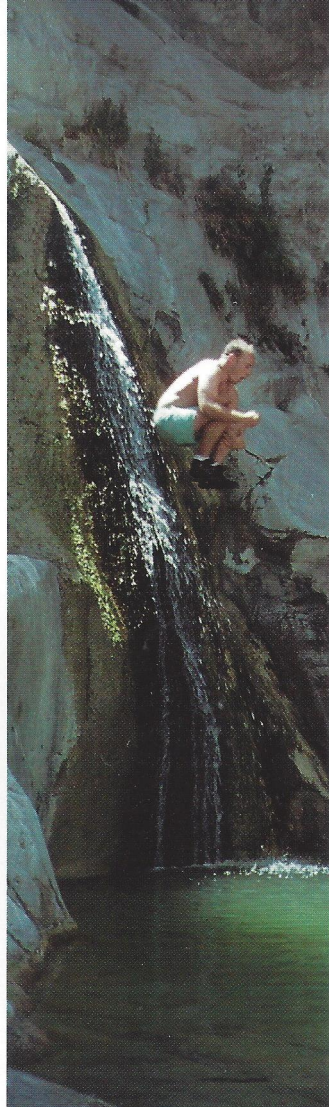
I will keep in touch. Maybe I'll become the next Charlie Campbell; you'll need to keep an office for me in Thomas building permanently

Take Care,

Roberto Zenit.

PS. Did you finish your hiking book? Don Koch is also an avid hiker. I mentioned your book to him, he seemed very interested.

Astronaut candidate Reisman experiences weightlessness of another kind while hiking with Chris Brennen in the San Gabriel Mountains.



AND HE'S BUILDING A STAIRWAY TO HEAVEN

When Garrett Reisman (MS '92, PhD '97) was a grad student here, he was president of the Caltech Flying Club. Now he hopes to trade in his Cessna for a space shuttle—he is one of the latest crop of 25 astronaut candidates chosen from across the country to begin a yearlong training and evaluation program at the Johnson Space Center in August. Reisman will be training as a mission specialist. “We don’t actually fly the shuttle; we’re the guys who sit in the back and operate the payload. But we do get to do other cool stuff—we take spacewalks and run the robot arm. The shuttle drivers don’t—they have to stay at the controls to keep the shuttle in the right relative position.” Although it’s far too early for him to have been assigned to a specific mission, he notes that his class of trainees will be the ones building and maintaining the International Space Station.

Reisman, who got his degrees under Professor of Mechanical Engineering Chris Brennen, credits Brennen with helping land him the appointment. “He wrote lots of letters of recommendation, and he told them about all the things we had to do to keep the water tunnel going. When you’re an experimentalist, you have to do a lot of problem solving. I did plumbing, I changed out pumps, I did a lot of stuff besides just running my experiments. They were looking for mechanical and aeronautical engineers with hands-on experience, and the cavitation work I did at Caltech probably made the difference.” □

Three local men selected as astronaut candidates

By Robin Lloyd
STAFF WRITER

LA CAÑADA FLINTRIDGE —

Ground control to Stanley Love, John Olivas and Garrett Reisman?

They aren't in space yet, but you might need a radio to reach two ecstatic Jet Propulsion Laboratory engineers and a Caltech graduate who are flying high from word they've been selected by NASA for the 1998 Astronaut Candidate Program.

The men were among 25 candidates notified earlier this month that they were in.

"My initial reaction was disbelief," said Reisman, 30, who got his doctorate from Caltech last year and works for TRW designing auto-pilot programs for satellites.

"It came as a big shock. One of the first things I did after I

EYES IN THE STARS

1998



LOVE



OLIVAS



REISMAN

got the call is I called back to the selection office and asked them to convince me that it's really happening."

Love, 33, works with Hubble Space Telescope images, and

Olivas, 32, has done research and design work for the prototype X-33, a reusable launch vehicle, and JPL's Deep Space 2, Stardust and Champollion missions.

Olivas called being selected "a dream come true." He had the same reaction as Reisman when he got the call.

"I got called about 8:30 a.m. California time by a guy at Kennedy Space Center," Olivas said. "Needless to say, I was ecstatic. I kept on going, 'I don't believe it. I don't believe it. I don't believe it.' He finally got to the point of saying, if you don't believe it, call Houston."

Love's reaction was mixed. "I was delighted, honored and scared," said Love, a Pasadena resident.

Classes generally are picked every two years from 2,000 to 3,000 applicants. The top 100 or so applicants are split into groups of 20 that come in for a week of tests and evaluations at Johnson Space Center, including a one-hour interview with an astronaut-selection board.

Please turn to SPACE / A10

SPACE

Education is the key to shooting for stars

Continued from A1

The minimum criteria for selection are a bachelor's degree in math, science or engineering, and at least 1,000 hours in command of a high-performance jet for those aspiring to be pilot astronauts.

"The guys that I was in there interviewing with were just so impressive. It was intimidating," Olivas said.

About 30 percent of applicants flunk the medical exam and about 25 percent of those that remain get selected for the program, Love said.

While training at Johnson Space Center in Houston, astronaut candidates learn parachuting, wilderness and water survival techniques, scuba diving, space suit and shuttle operations and some geology and ocean meteorology.

That allows astronauts to forecast the weather when they look out the space shuttle's win-

dows — an opportunity all three men could advance to within three years.

The candidates also develop proficiency with high-speed jet aircraft by practicing on a T-38 jet trainer at Ellington Field a few miles from Johnson Space Center.

Candidates are evaluated at the end of the year and most are graduated to become astronauts.

The local men all got the space bug as children.

"I just devoured sci-fi books when I was a kid," said Love, who along with Olivas had applied before to the program.

"If you show tenacity, they like that," Love said.

Love gave first-time applicant Reisman advice last year before his interview at Johnson Space Center. "Obviously, it worked," Reisman said.

All three men have doctorates, with Olivas and Reisman completing theirs in mechanical engineering and Love in astronomy.

Olivas credited his peers at JPL for encouraging him.

"I feel that if it wasn't for me working in (JPL's) quality assurance section, I'd still be getting those 'thank you, but no

thank you' letters," he said.

Reisman credited his thesis advisor, Caltech engineering professor Chris Brennen.

Aspiring astronauts should concentrate their studies on science and math in high school and college, Reisman said.

"They are looking right now primarily for scientists and engineers to be mission specialists," Reisman said.

Military service as a fighter is another route, he said.

The real key is to find work that drives you, Reisman said.

"If you're not doing something that you love to do," Reisman said, "it's not going to work out for you."

SEN THE BEST

You'll pro
consider

1998

BRENNEN NAMED NEW VICE PRESIDENT FOR STUDENT AFFAIRS

Professor of Mechanical Engineering Chris Brennen will assume the duties of vice president for student affairs on January 1, replacing Gary Lorden, professor of mathematics, who stepped down after an eight-year term. Brennen has much experience in student affairs, having served as dean of students from 1988 to 1992, and as master of student houses from 1983 to 1987.

"I am looking forward to the challenge of the vice presidency," says Brennen. "Right now, there is a great deal to learn before I decide on specific goals," he adds. "Because of the remodeling of the Bookstore, some areas in Student Affairs are in a state of flux right now. We need a coherent plan for the department, which I hope to work on soon, including addressing issues such as facilities. Student Affairs departments are in a multitude of offices right now. We need to find ways to co-locate them that are more efficient and user-friendly to students."

In studying for his new job, Brennen recognizes the accomplishments of his predecessor. "Gary did a marvelous job as vice president," says Brennen. "Great new facilities have

been added to Caltech, such as Avery House and the Braun Athletic Center. Incidentally, I am a strong supporter of the concept behind Avery House."

Brennen received his D.Phil. from the University of Oxford in 1966. He came to Caltech in 1969 on a Fulbright Scholarship, and joined the teaching faculty in 1976 as an associate professor. He was appointed professor in 1982, and executive officer for mechanical engineering in 1993.

The author of more than 180 technical papers, Brennen has also

authored seven books, one of which is being translated into Japanese. An avid hiker, Brennen has written a book entitled *Adventure Hiking and Canyoneering in the San Gabriels*, which is currently under review by a publisher.

In mechanical engineering, Brennen conducts research on complex multiphase and multicomponent flows that are a ubiquitous part of almost all existing energy systems. A particular

See BRENNEN page 2

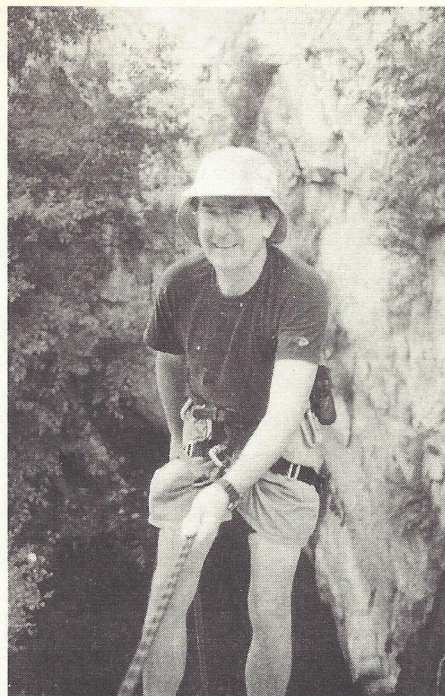
BRENNEN

Continued from page 1

emphasis is on the prediction of the dynamic characteristics of multiphase flows or their behavior at high concentrations. One project of Brennen's is directed at improved understanding of the dynamics and acoustics of cavitation.

The environment for student affairs at universities has changed a great deal in the 10 years since he was MOSH, Brennen says. "Both the general public and the government expect a university to take a greater parental role." Further changes include the makeup of the Caltech student body, which now has more female and minority students. "There is now a greater appreciation of the needs of particular groups," he says.

One thing, however, hasn't changed, says Brennen. "Caltech students are still the same marvelously bright, enthusiastic, caring, and responsible people they've always been. I look forward to getting to know them better."



Whether rappelling down a thousand-foot cliff or addressing student affairs issues, new VP Chris Brennen is ready to tackle the job.

Chris Brennen New Vice President for Student Affairs

BY DAVID BALTIMORE

I am pleased to announce that effective January 1, 1998, Professor Christopher E. Brennen has been appointed Caltech's new Vice President for Student Affairs. I have had an opportunity to get to know and admire Chris during my brief tenure here at Caltech, and I am looking forward to working with him in this new capacity. The search committee and others I consulted about this appointment were unanimously enthusiastic in recommending Chris to me as the best possible candidate for this position.

I would also like to take this opportunity to thank Gary Lorden for his outstanding service as Vice President for Students Affairs during the past 8 years. I particularly appreciate his willingness to sacrifice his research and teaching for an additional 6 months in order to bridge the gap between his desired retirement date and the date when Chris will undertake this new responsibility.

Chris Brennen new Vice 1998 President of Student Affairs

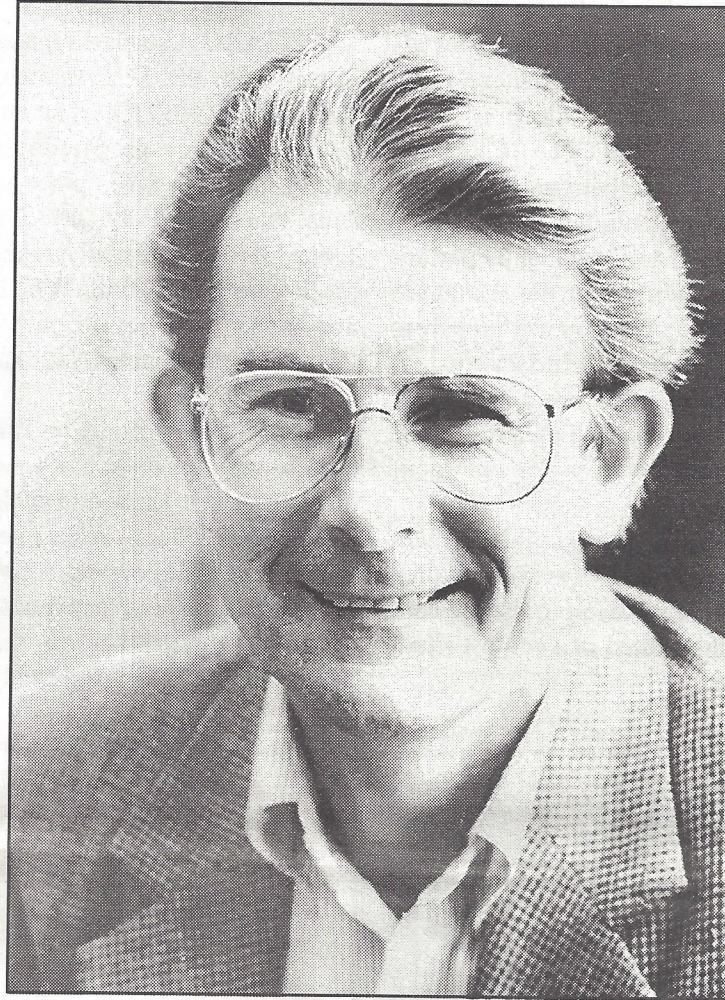


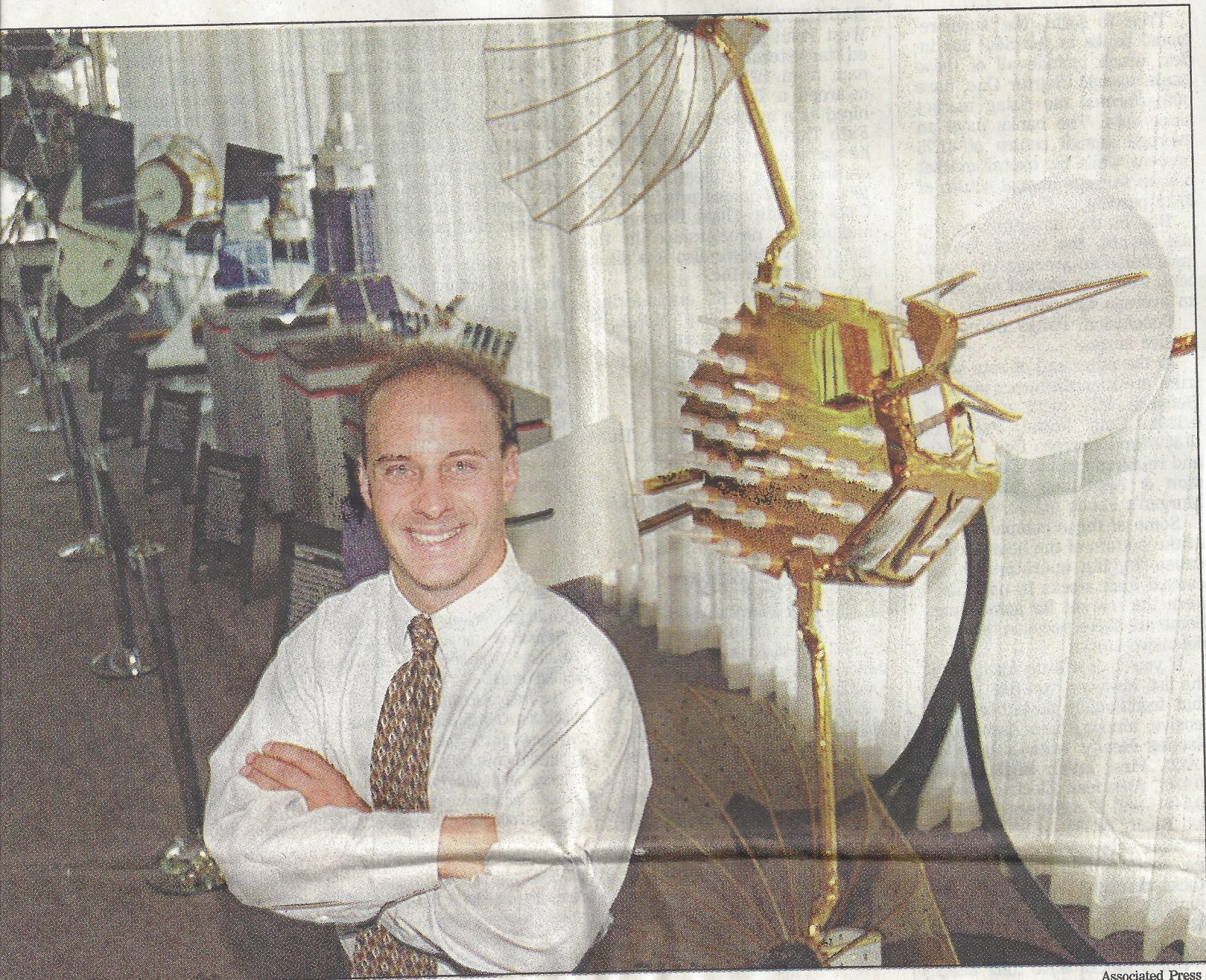
PHOTO COURTESY PUBLIC RELATIONS

Former Dean and MOSH Chris Brennen has been appointed Vice President of Student Affairs. Stop by and visit him in Parsons-Gates. We did.

FROM TRW TO NASA TO SPACE

1998

Newest astronaut smarter than Bart



Associated Press

Garrett E. Reisman, named an astronaut, poses at TRW in Redondo Beach, Calif., in front of models of space equipment made by the company.

In fact, this 'Simpsons' fan is some kind of achiever

DAVID ADAMS
Journal business writer

Just for empty-headed giggles, Brett E. Reisman, former employee of Lyndhurst-based TRW, watches *The Simpsons* — the cartoon featuring a kid who relishes being an underachiever.

For relaxation, Reisman watches the show about nothing, *Seinfeld*, and the popular prime-time hospital drama, *ER*.

Just a regular guy?

Not really.

This week, when Reisman formally begins his new career as one of NASA's youngest astronauts — and the first from TRW — brains with him more than just

an affinity for slacker TV.

Reisman is a Generation X astronaut-scientist *Wunderkind* who has collected career milestones, personal accomplishments and academic degrees the way most people collect shells.

At the tender age of 30, Reisman has already graduated magna cum laude with a bachelor's of science in mechanical and applied engineering from the University of Pennsylvania, a bachelor's in economics from the Penn's Wharton School of Business, and a master's and a doctorate in mechanical engineering from Cal Tech, the California Institute of Technology.

Real smart guy.

He has already worked on hypersonic missile systems, written programs used to guide orbiting spacecraft, participated in a cross-country solar-powered car race and became an expert in hydrodynamics, cloud cavitation (don't ask) and metal fatigue.

Hired two years ago by TRW's Redondo Beach, Calif.-based Space and Technology Division, the then-28-year-old so impressed his bosses and colleagues that he was considered a senior member of the technical team, which develops propulsion and guidance systems for NASA spacecraft.

In addition, he is licensed pilot and a scuba diver, has been the

coach for a high school co-ed wrestling team, and has climbed Mount Huana Potosi, a 20,090-foot-high ice-covered peak near La Paz, Bolivia.

With all that drive, intellectual rigor and energy, one might imagine that Reisman was always brilliant at propulsion systems and space-age stuff. *Au contraire*.

As a kid in the mid-1970s, Reisman recalled, he was playing with a model rocket, shooting it off in an open field near Lake Hiawatha in suburban New Jersey. The day ended when the rocket's parachute got stuck in a tree. That toy

See NASA, Page G8

NASA

• Reisman was chosen from list of 25,000

Continued from Page G1

rocket may still be there, he said.

"I hope my shuttle mission goes a little better," he joked last week.

Childhood setback aside, Reisman has rarely suffered such a reversal since.

Last fall, he beat out an extremely qualified group of more than 25,000 astronaut wannabes — engineers, scientists, doctors, other really smart people. He is part of a 25-member class of astronauts who begin training this week.

Since 1959, there have been 214 astronauts, including 141 for the space shuttle program.

Reisman, displaying some of his irrepressible humor, jokes that getting into the program was simply a function of effective groveling.

"I just went down there and said: 'Please, please, please let me be an astronaut,'" he said.

Professor impressed

Reisman is a hard-to-find combination of brilliance, good humor, and well-groundedness, said Christopher Brennan, a professor of mechanical engineering at Cal Tech and a longtime friend and confidant of Reisman's.

"Very few students are blessed with the intellectual ability to do the theoretical work and the ability to work hands-on with devices

That Brennan found Reisman bright was not surprising, Brennan said. But it was a delight to find him equally as impressive as a well-rounded person: funny, self-effacing and easy to be with.

The two met about seven years ago when Reisman did his Ph.D. work under Brennan. The two became friends despite their 26-year age gap. They go on long hikes together, fly planes together. Reisman even taught Brennan to rappel down the sides of mountains.

"I think of this young man almost as my son," said Brennan, whose own son died about three years ago.

Reisman's starry-eyed aspira-

tions of being an astronaut a la Neil Armstrong and John Glenn go back to his days in New Jersey. He almost wore out a Super 8 film version of the Apollo 11 lunar landing as a kid. When he was 12, he said, Reisman spent nearly two whole days wandering around the National Air and Space Museum in Washington, D.C.

"I thought this would never, never happen," he said of his selection to the elite astronaut corps. "I looked at the statistics and realized that this would probably never happen. I wouldn't build my life around being astronaut."

But he kept his eye on the prize. He got his pilot's license, took engineering classes, and even pushed for the job at TRW so he could work on space-related projects. He thought about becoming a fighter pilot, but, he said, his mom nixed the idea.

ASTRONAUT REQUIREMENTS

Mission specialists

- Bachelor's degree in engineering, mathematics, or biological and physical science, followed by three years of applicable professional experience. Advanced degree preferred.
- Must be between 58½ and 76 inches tall.
- Pass a Class II military physical; have eyesight of at least 20/150 (uncorrected) but correctable to 20/20 in each eye, blood pressure of 140/90.
- Must be a U.S. citizen.

Pilots

- Bachelor's degree in engineering, mathematics, or biological and physical science.
- At least 1,000 hours flying experience in a jet aircraft; test flight experience preferred.
- Must be between 64 and 76 inches tall.
- Pass a Class I military physical; have eyesight of at least 20/50 (uncorrected) but correctable to 20/20 in each eye; blood pressure of 140/90.
- Must be a U.S. citizen.

*Note: Astronauts are federal employees and, upon satisfactorily completing the 18-month training and evaluation period, are expected to stay with NASA for at least five years.

His last day with TRW was Friday. Starting tomorrow Reisman and the rest of his class will embark on an intense 18-month training period. He will learn how to walk in space, how to operate the shuttle's robot arm, how to work in a weightless environment. And even though he will be a mission specialist, Reisman will learn how to fly the shuttle (promising to stay away from Lake Hiawatha, he says).

He is tentatively slated to blast off in a couple of years on a shuttle that will help build the planned manned space station. Exactly what he'll do during his space flight will depend on the objectives of his particular mission.

Reisman's multifaceted skills seem to make him a particularly well-suited mission specialist, said Elizabeth Ruiterman, spokeswoman for TRW.

For example, for a cross-country solar-powered car race while at the University of Pennsylvania in 1989, Reisman designed and then built a front-end suspension system. He also designed and built a steering system from

scraps of aluminum and steel for less than \$60.

During the race, the brakes failed on his team's low-budget car. Working late at night in a hotel room, Reisman and his teammates fashioned new car brakes using parts from a bicycle brake, a jet ski cable and a foot pedal fashioned from a hinge on their rented Ryder truck.

Reisman hopes those patchwork skills won't have to be used on any of his missions, he said last week.

Still, the gravity of what he is about to do weighs on Reisman. He, like most of the rest of the nation, remembers where he was in 1986 when the Challenger space shuttle exploded shortly after lift-off (Reisman was home from school either on a sick day or a snow day).

NASA officials are very frank and open with aspiring astronauts about the dangers they may face, Reisman said.

"To me, the reward and opportunity to have this experience, to go up in space and look down at the planet, is a very noble and exciting endeavor," he said. "People think to be an astronaut, you have to be courageous and brave. That's not true. You have to be so excited

about what you're doing that the fear and anxieties are not that important."

Earlier this year, shortly after Reisman was chosen to be an astronaut, an insurance salesman reached him on a cold call.

"Does this policy cover space flight?" Reisman said, re-enacting the conversation. "You know, like

astronauts, the guys that go in space?"

After a long pause, the salesman hung up.

"Now you know what to do when you get a call from a life insurance guy," he chuckled.

Feb 9, 1998

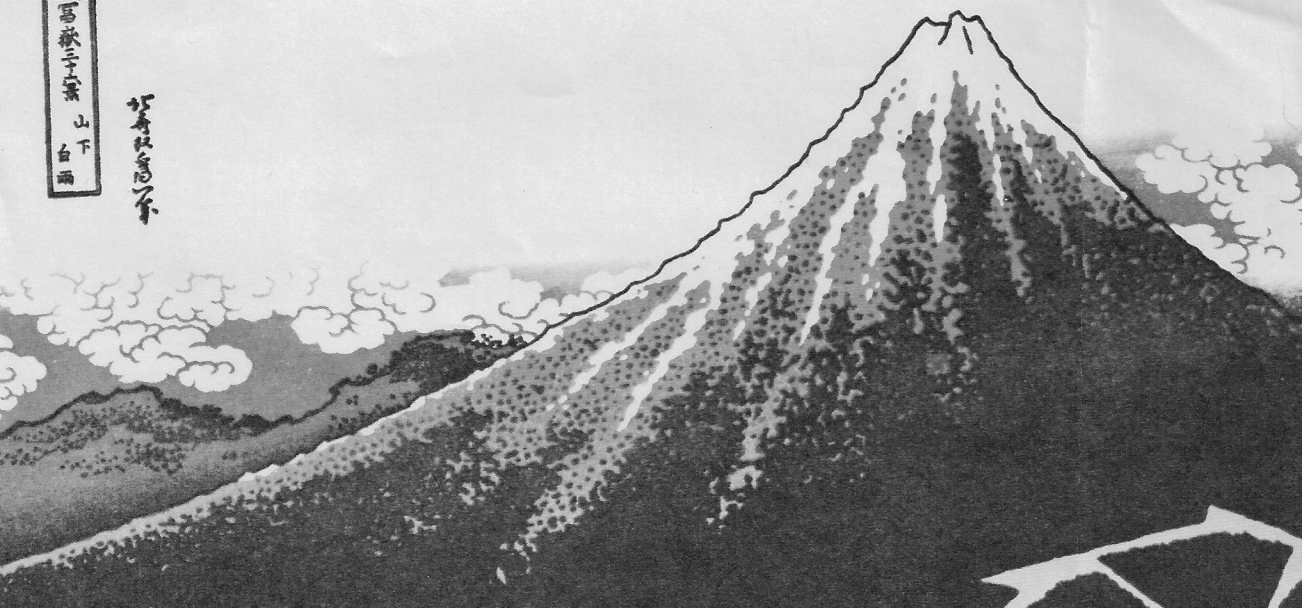
Dear Chris,

I really appreciated your visit in the hospital. It was an unpleasant time for me but my spirits were certainly lifted by seeing a friendly face. The book was just what I needed to take my mind off the early pain. Thanks again and especially for your friendship.

Tuo

富嶽三景 山下
白濁

坂本龍馬



NEW from OSAKA UNIVERSITY PRESS

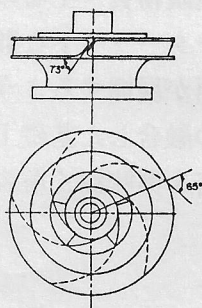
★最新の情報を網羅★
—最適設計に資する—

ポンプの流体力学

HYDRODYNAMICS OF PUMPS

CHRISTOPHER E. BRENNEN

辻本良信 訳



ポンプの高速化に際して問題になる振動
とキャビテーションの問題を中心に詳説、
研究者・技術者・設計者に最適の参考書。
補遺として「ターボ機械の不安定現象」
を訳者により付す。

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- 第2章 基本原理
- 第3章 二次元性能解析
- 第4章 流れの他の性質
- 第5章 キャビテーションに関するパラメータと初生
- 第6章 気泡力学、損傷と騒音
- 第7章 キャビテーションとポンプ性能
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著者● C. E. Brennen [カリフォルニア工科大学教授, (現)副学長]
訳者● 辻本良信 [大阪大学大学院基礎工学研究科教授 工博]

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大阪大学出版会

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THE TRAVEL INDUSTRY'S ONLY NATIONAL NEWSPAPER

TRAVEL WEEKLY

VOLUME 57, NUMBER 67/MONDAY, AUGUST 24, 1998

TRAVEL WEEKLY

AUGUST 24, 1998

BUSINESS TRAVEL UPDATE

Travel Manager Sings the Praises Of ARC Program

Continued from Page 39

[it is] measured on average daily rate, and a \$150 commissionable rate looks better than a \$135 net rate.

"I understand it, but I don't," Menkes said.

Menkes said he believes if the commission was going to flow from the hotel to the agency and back to him, it made sense for the hotel to give him a net rate up front, eliminating all the machinations.

"If we have our own ARC number, it would be a lot easier just to tell the hotel, 'Fine, play with your numbers, do whatever the heck you want,'" he said. "But why should I have the commission check

*Republic got the OK
in June to participate
in the ARC pilot.*

flow through all these processes and these 14 hands when you can just write a check to us? It's a straight line."

Menkes, who said he got the go-ahead to participate in the pilot in early June, put together a proposal for a new agency.

He said he had three very

OBSERVER

Searching for Nirvana

BY DANAMICHELE
BRENNEN O'BRIEN



The key to reaching a true market equilibrium is to have freely moving supply and demand curves, and although the airline industry was officially "deregulated" in 1978, the last thing this industry engenders is a freely moving supply curve.

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That's nirvana.

Danamichele Brennen O'Brien is a vice president and chief travel scientist at Rosenbluth International, which is based in Philadelphia.



JIM GAYMAN

JOB TITLES OF THE FUTURE

Chief Travel Scientist

WHO Danamichele Brennen O'Brien

COMPANY Rosenbluth International

AGE 34

HAS HELD TITLE FOR 19 months

PREVIOUS TITLE Director, global marketing and product development

DEGREE BA, University of California, San Diego; MS, Carnegie Mellon; MS, Wharton School

BUSINESS MAY BE AN ART, BUT DANAMICHELE

Brennen O'Brien is turning business travel into a science. As the head of a research team at Rosenbluth International (annual sales: \$3.5 billion), O'Brien is developing services designed to turn reservation agents into travel consultants. The goal: not just cheaper travel, but better travel.

SHANNON SPRING

What's wrong with business travel?

There's nothing fun about business travel. It's tiring; it takes you away from family. The key is to understand when travel really is productive—and when you can avoid it.

What's your idea for fixing it?

We want people to think in terms of "travel management" rather than "travel expenses." Don't just analyze how much a trip cost; analyze how successful it was.

How do you test your ideas?

I spend at least half of my time with clients. They help me test whether what's coming out of our lab is worthwhile.

Are you a science nerd?

My father is a professor of engineering at Caltech, so maybe it's a family thing.

ASSOCIATE VICE PRESIDENT

FEB 11 1998

FOR INSTITUTE RELATIONS

in gear

PLAY SMART

If it's February, then spring training must be just around the corner. So it's not too early to start thinking about the office softball league. Here are two smart plays for next season.

The **Copperhead ACX** is baseball's first "electric bat." It uses vibration-control technology that was originally developed for jet fighters and applies that technology to the collision between bat and ball. What's the point? By converting unwanted vibrations into small amounts of electricity, the Copperhead enlarges the sweet spot and reduces the "sting" caused by an off-center whack.

Rawlings's **Radar Ball** is the first baseball that clocks how fast it's thrown. A built-in microchip calculates how long it takes the ball to travel the standard distance from a pitcher's mound to home plate, converts the result into miles per hour, and displays the speed. To reset the timer, just tap the ball three times.

The Copperhead retails for \$299. Call Worth Inc. (931-455-0691) or visit the Web (www.worthsports.com). The Radar Ball costs \$34.99 to \$39.99. Call Rawlings (800-729-5464) or visit the Web (www.rawlings.com). **HEATH ROW**



Photograph by BILL WHITE

FAST TALK HE'S JUST A REGULAR GUY AFTER ALL
"When I was young I wanted to be the world's best chess player and, of course, I didn't succeed. I wanted to be the world's best Go player, too. . . . There are people I WANTED TO HIRE WHOM I COULDN'T. So I've had plenty of disappointments."

BILL GATES, CEO, MICROSOFT CORP., IN *BILL GATES SPEAKS*, BY JANET LOWE (JOHN WILEY & SONS, 1998).

CLIP & SAVE

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OP-ED

THE KEY TO REACHING A TRUE MARKET EQUILIBRIUM IS TO HAVE FREELY MOVING SUPPLY AND DEMAND CURVES. AND ALTHOUGH THE AIRLINE INDUSTRY WAS OFFICIALLY DEREGULATED IN 1978, THE LAST thing this industry engenders is a freely moving supply curve. An industry's supply cannot be truly competitive when its infrastructure (airports and landing rights) is severely constrained. And while these constraints are physical, they are also a manifestation of the prevailing political environment—the increasingly oligopolistic airlines have no motivation to loosen the supply curve or to unconstrain the infrastructure. So, how do we approach “nirvana,” a.k.a. a more competitive airline industry?

Government has been actively exploring ways to correct this market's problematic competition status. It would be a win for the status quo if government were to wallow away the years, spending lots of its time and our money trying to regulate airline prices and detect monopolistic pricing behavior. As sophisticated a science as statistics is, finding a correlation between numbers rarely irrevocably proves causality. Unfortunately, if the powerful lobbyists behind the oligop-

Danamichele Brennen O'Brien is vice president and chief travel scientist at Rosenbluth International in Philadelphia.

olies succeed, this path of chasing after pricing behavior could prevail, as opposed to a path that encourages those tax dollars to be spent on things that could really change competition in the marketplace—infrastructure and access.

So, how do we approach nirvana, an air transportation industry where supply and demand curves move more freely, and therefore are more reflective of true market price equilibria? While there is no magic bullet, there are certainly two places where everyone can start. First, professional travel organizations could become much more active in educating government about the benefits of concentrating revenues on expanding infrastructure instead of the fruitless "re-regulation" of prices. Second, corporations should work with their travel management firms to aggressively address the effects of airline oligopolization and monopolization in their business and technology planning. For example, innovations in broadband communications and video technology enable "virtual airlines" which essentially create new infrastructure and new competition for airline alliances to contend with! Again, this is just a place to start, but at the very least, if more focus turns to these two areas then perhaps, just perhaps, that's a signal that the debate about airline competition has finally turned to encompass a larger social agenda. Now that's nirvana!



OP-ED

REMEMBER THE AIRLINE ANTITRUST LITIGATION COUPONS? WHAT AN ENORMOUS WASTE OF TIME AND WORK! THESE COUPONS WERE ISSUED IN 1994 AND GOOD UNTIL 2001 FOLLOWING A LAWSUIT THE AIRLINES SETTLED, WITHOUT TRIAL, OVER HUB PRICING ISSUES. OVER 4.2 MILLION

coupons, I have found few corporations or consumers who have yet used a single one. Mine remain unused, as my airfares have discounts in excess of 10 percent.

The result of this exercise was wasted time and effort for very little benefit. Assuming the average claim took two hours to research, 960

Business Travel News

BTN

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BUSINESS TRAVEL UPDATE

DIGEST

Continued from Page 39

In Europe, the hotels are the Renaissance Salzburg Hotel in Austria; the Renaissance Munich Park Hotel in Germany, and, in England, the Renaissance Heathrow Airport Hotel and Renaissance Gatwick Hotel in London, the Renaissance Manchester Hotel and the Renaissance Reading Hotel.

Asia properties are the New World Renaissance Kowloon Hotel and New World Renaissance Harbour View Hotel in Hong Kong; the Renaissance Inya Lake Hotel in Yangon, Myanmar, and the New World Renaissance Makati City in Manila.

The Mideast property is the Renaissance Tel Aviv Hotel in Israel.

Car Rental

Hertz Club on Web

Hertz customers can enroll in the Hertz No. 1 Club Gold via the Web at www.hertz.com.

Customers must read the terms and conditions

Travel Manager
Sings the Praises
Of ARC Program

Continued from Page 39

[it is] measured on average daily rate, and a \$150 commissionable rate looks better than a \$135 net rate.

"I understand it, but I don't," Menkes said.

Menkes said he believes if the commission was going to flow from the hotel to the agency and back to him, it made sense for the hotel to give him a net rate up front, eliminating all the machinations.

"If we have our own ARC number, it would be a lot easier just to tell the hotel, 'Fine, play with your numbers, do whatever the heck you want,'" he said. "But why should I have the commission check

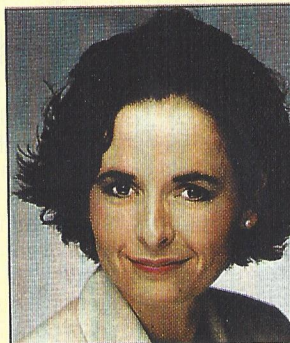
*Republic got the OK
in June to participate
in the ARC pilot.*

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Don't Leave Home?

DACODA® Recommends Travelers' Best Option

DACODA®, Rosenbluth International's revolutionary, patent-pending decision support tool, is combating airlines' yield management systems at unprecedented levels. While the government, corporations, and travel agencies are all searching for ways to increase competition among airlines and alliances, Rosenbluth International has been actively creating competition and leveling the playing field with DACODA for more than four years — and now DACODA has enhanced, more powerful functionality.

With the cost impact of alliances on the rise, corporations are aggressively realizing even more advantage from managing travel with DACODA. This includes incorporating innovative options such as telephone or videoconferencing into the portfolio of choices which DACODA optimizes. "Travel managers need to manage this now viable form of virtual travel within their traditional airline portfolio — DACODA is the answer. It creates airline competition," said Danamichele Brennen O'Brien, vice

president and chief travel scientist, Rosenbluth International.

While some clients already have videoconferencing systems, which can be part of their DACODA portfolio, Rosenbluth International has introduced to its clients a system more advanced than traditional videoconferencing. Rosenbluth International has announced a strategic alliance with TeleSuite® Corporation, the preeminent leader in virtualconferencing, to create the Rosenbluth International TeleSuite Network of broadband virtualconferencing centers.

For each traveler, DACODA analyzes a corporation's data, the costs of all the options and many other factors to recommend the most optimal solution. DACODA was created in 1994 to decipher complex airline pricing and identify the most favorable airline options. While this remains an important component of DACODA, the product has evolved with the changing industry to analyze the impact of alliances, as well as to incorporate alternative options such as a client's videoconferencing system or their new

virtualconferencing into their long-term purchasing strategy.

DACODA may recommend virtual travel as the best option for saving clients money and making travelers more efficient. More important to the frequent travelers, virtual travel can create a balance by satisfying the need for a face-to-face meeting while maintaining more time for family and leisure activities.

"Don't leave home is not typical advice from a travel company, but if it makes sense for our client, we recommend it," said Danamichele. "Ultimately, we are in the business of connecting people. Virtual travel is the next logical step for our business. TeleSuite will allow us to connect our clients from point A to point B in a shorter amount of time. As we've seen in all business practices from overnight delivery to e-mail, this era is about time compression — allowing people to do more — faster."

Unlike traditional videoconferencing, the TeleSuite broadband system uses a patented "video mirror" concept to create the other half of the room, enabling life-sized participants to appear to be together sharing the same space. Utilizing a dedicated network provided by IBM Global Services, with display by NEC Technologies and powered by

VTEL, TeleSuite's Network Operations and Control Center provides a one-phone-call service for reservations, remote operations, and proactive network management. The end result is as good as being there.

"This technology potentially has huge ramifications to the airline industry," said Danamichele. "The higher the cost of an airline ticket, the bigger the market is for travelers to use TeleSuite. We believe that our clients will welcome this technology because it requires no IS involvement, it can result in huge cost savings, and road warriors can spend more time with their families. Quite simply — it works!"

To find out more about TeleSuite, please contact Ed Barrett at (215) 977-5746.

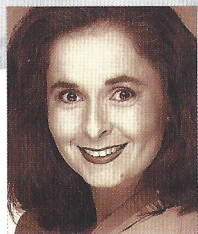
TELE  SUITE
CORPORATION™

VIEWPOINT



"Lemonade to Internet Auctions"

by **Danamichele Brennen O'Brien**
Vice President and Chief Travel Scientist



It was a hot day in June. Alex and I were on the sidewalk — selling lemonade. Sales were brisk. Kids were really taking to our "secret recipes:" pink, yellow, "pinkow," and diet pink. Alex had the greatest idea — a variety of cup sizes and "fill levels." This really added to our ability to increase our profit margins "on the fly." And we both knew that more profit meant the ability to buy more french fries at the new ball park!

A month into our success, the ball park officially opened. The field was at the end of the block. The park's

concession stand opened, too. It was right behind the first baseline stands. We felt a small decrease in business on that first day they were open, and weren't sure how our business would hold up against the ballpark stand's convenience factor. On the second day, sales were as brisk as ever — apparently our product was quite unique! Good news!

As we were packing up our stand that night, Alex tripped head-first into the ice chest. Alex stood up — slightly shaken — and took off down the street towards the concession stand. A half an hour later, I was informed that we had a new distribution partner — the concession stand!

"But what about our product quality and our flexible pricing strategy?" I asked.

"Not to worry," said Alex. "We'll supply only yellow lemonade to them, which only appeals to some kids, and we'll charge the concessionaires an amount that doesn't give them a lot of room to mark it up!"

"Great," I said. "Alex. . . have you ever thought of working for an airline?"

Okay, okay, so this never really happened. But it's a metaphor for exactly what's happening on the Internet today with airline product, distribution, and pricing. Just like Alex and I did, the airlines own the product. And just like Alex and I did, the airlines look for alternative distribution channels to sell certain product within certain price ranges. And, finally, just like Alex and I did, the airlines control those price ranges.

So, how does this help to characterize the Internet auctions for airline products? Do the auctions "own" the actual product? No. Are they influential enough to wrestle price-range

setting away from the airlines? No. Are they convenient for some buyers? Yes. Are some buyers drawn to them because they sell their favorite "consolidator-esque" product? Yes. Do some buyers enjoy the "gaming" aspects of an auction? Yes. Will the Internet auction disintermediate the "old" distribution channel for this type of product to this type of buyer? Probably — but only if and when the airline chooses so. Make no mistake, the airlines are good business people...just like Alex and I were.

So, in what situation would an auction on the Internet be more of a "price-setting mechanism" and not just a distribution channel? The short answer is: "When the owner of the product wants it to be." The longer answer is: "When the owner of the product is sure that the product and product pricing activity in that distribution channel will not 'corrupt' other channels and other prices." But the best answer is Alex's — "When the auction is for Beanie Babies®. That's 'safe' — the price only goes up!"



TRAVEL MANAGER'S

DESKTOP

A View from The Edge

by **Danamichele O'Brien**
Chief Travel Scientist



The Edge.

How does it feel? It depends on who is standing there with you.

The Edge of Travel Management is what we at Rosenbluth International call, "Travel Science." As the rate of innovation approaches warp speed around the globe, it becomes imperative to approach emerging technologies and trends in travel in a scientific manner, hence the term "Travel Science." Corporate travel decision makers need strategic answers to questions like: How fast will these innovations invade my world? What do I need to be concerned about? Is this a passing trend, or a significant innovation? And that's what Travel Science attempts to do—take answers one step further through identifying the base elements of innovations, and their relationships to others—not just

by the distance between their pupils. Individuals can also usually be uniquely identified by their fingerprints, although a scan of their entire hand's geometry is even more error proof. The advent of bigger storage, faster processing microchips has propelled the methods of biometrics into the mainstream—and right onto emerging smart cards! Now, using biometric templates, a chip-based card can uniquely identify the holder of the card; making sure that the person using the card to make payments, retrieve goods or services or gain access to an area is really the authorized person.

So, now you've got a traveler walking around somewhere with a card in their pocket. This enables that person to be "tracked." For example, British Airways is piloting a chip-based system where passengers' ticket jackets are "tagged" with a contactless-chip smart card so the airline knows when the passengers

Starting to get the picture? Next we have neural networks—the next generation of computer software. Neural networks are systems that update themselves, and learn from their mistakes. Presently, these systems are in broadest commercial use in the credit card industry in detecting card fraud. In this application, neural networks sift and sort through dynamic purchasing data in the credit card back office systems, looking for fraudulent patterns. Airlines also use these systems to look for suspicious travel patterns. While neural network applications designed for crime prevention could certainly become intrusive, they are child's play compared to what marketers could do with these systems. Imagine a system that learned about a consumer's likes and dislikes, his or her purchasing and returns, etc. on a continuous, automated basis! Now, for the ultimate—link that to a smart card, with a biometrically verified system that tracks you around the world in your every

move. Suddenly, you'd have individualized marketing propositions being made to you with every move that you make around the globe!

Have we taken this to The Edge? We certainly have. But remember that all applications of seemingly innocuous technologies can lead the traveler—the person who doesn't want to be monitored every second of his or her hard-working life—down a path like this. So travel decision makers need to be cognizant of these issues and concerns. User assurances that standards, safeguards and privacy measures are in place become very important to even the most seemingly harmless technology. At Rosenbluth International, we are accustomed to seeing things below the surface and anticipating the associated needs and concerns in a scientific manner.

So, how does it feel to be on The Edge? Again—it depends on who is standing there with you.

what is obvious on the surface today. This "View from The Edge" will illustrate the value of a Travel Science approach by tying together three seemingly unrelated technologies: smart cards, global positioning systems and neural networks.

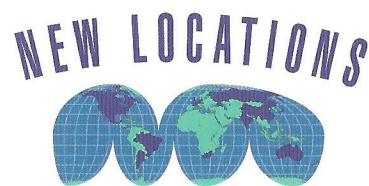
So what do smart cards, global positioning systems and neural networks have to do with each other, and why should a corporate travel decision maker be thinking about those relationships in 1998? The short answer is that these three technologies will converge through biometrics, which will spawn Rights to Privacy issues that corporate travel managers will need to anticipate. What does that mean?!? Well, let's back up and review the basic technologies:

- **Smart Cards:** portable, personal chip-based devices which store and process data
- **Global Positioning Systems:** satellite systems that enable global earth surface tracking
- **Neural Networks:** next generation software programs that "learn"

Now, how do the three of these converge through the science called biometrics? Biometrics identifies individuals using their physical characteristics. For example, individuals can be uniquely identified by the cellular composition of their retina (the inside, back of their eyeball) or

are reasonably close to the gate. Taking this one step further, at the Lankawi Airport in Malaysia, passenger palm prints are digitized so that travelers carrying smart card-boarding passes can be uniquely matched with baggage that has been tagged with corresponding chip-based luggage tags (which embody the digitized palm prints of the owners). With this system, authorities can electronically verify that each bag in the plane's hold actually belongs to a passenger who has boarded the aircraft.

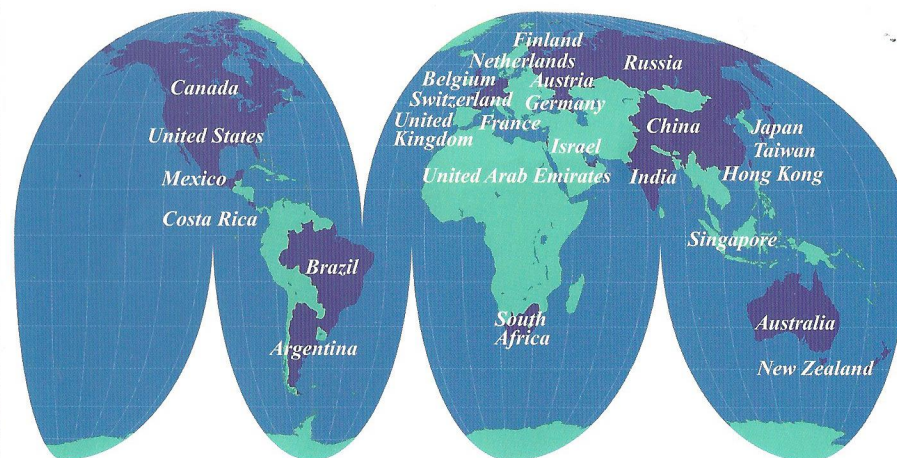
Okay, now for the next technology—global positioning systems (GPS). GPS are space-based radio positioning systems that provide 24 hour three-dimensional position, velocity and time information to suitably equipped users anywhere on or near the surface of the Earth. Hertz Corporation has packaged this government-developed system for use in many of its rental cars. Hertz cars equipped with Neverlost™ assist their drivers in navigation using receivers which calculate the exact current location of the vehicle using signals from orbiting satellites and a computer map and database. If someone were to marry this technology with biometric systems to identify that the driver is an "authorized" driver of the car, it becomes a system that can track any unique individual around, and beyond, the surface of the earth.



Finland Locations Initiated

Rosenbluth International continues its European expansion with the establishment of a new presence in Finland, including a full-service location in Helsinki and on-site operations in Oulu and Salo. "We continue to enter new markets based upon the needs of our clients, and our new locations in Finland are no exception," says Vice President Business Development, Europe, Julian Knott. "Although these locations will initially support a new client based in Finland, they will establish an initial foundation on behalf of other clients for further expansion into Scandinavia."

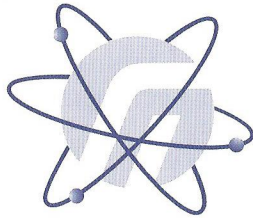
Rosenbluth International now has wholly owned and locations in eight countries in Europe, and owned and managed locations in 26 countries around the world.





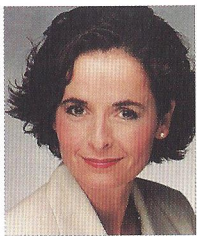
TRAVEL MANAGER'S DESKTOP

TRAVEL SCIENCE



A Bullish Revolution: Business Interaction Management

by Danamichele Brennen O'Brien
Vice President & Chief Travel Scientist



Okay, so let's review the situation: Asian economies began crumbling... global financial markets and corporate earnings projections started correcting... "volatility" appears in practically every newspaper article... Russia creates another ripple... where's the news on Brazil?... Europe's corporate restructuring momentum intensifies around outsourcing... monopolistic, upward pressure on airline prices looms inevitable due to alliance prolifera-

influence: an effective point at which decisions can be influenced (Note that the very name "point of influence" fundamentally transcends the notion of "[airline ticket] point of sale" — a concept more akin to order taking than management.); and **3) effectual alternatives:** a solution set of effective, financially sound alternatives to physical transportation (see "Beam me up Rosenbluth," *Directions* March/April 1998).

Let's talk about these three things. First, the decision support framework — Rosenbluth International has launched a research and development effort, aimed at finding out why

its travel reservation agents into a more consultative role, empowering them with alternative recommendations to travel. In addition to a corporation's travel policy and lowest-fare information, our associates will be armed with an array of options on how potential travelers might achieve their business objectives without ever getting on an airplane.

Finally, the third piece of the puzzle: effectual alternatives. We recognize that face-to-face communications are very valuable in business; however, we also believe there are some cases where an alternative to travel can achieve the same goal. Travel avoidance and options such as videoconferencing are just one small part of the solution. In some cases, we may recommend that certain salespeople

travel more to increase a company's revenues. Perhaps interaction can occur most effectively on one day instead of three?

Rosenbluth International is uniquely positioned to introduce this new concept and its three parts, given its track record with sophisticated, algorithmic modeling, its client-partner product development practices, and its unique cultural understanding of putting people first.

We are pursuing this new approach to help companies save money due to current global economic pressures, to improve the quality of life for our clients' employees, and because we believe it is the future of business travel management. It may shock the traditional travel industry, but we are bullish on helping our clients where it counts.

Looking Forward to Year 2000

by Neal Bibeau
Vice President and Chief Information Officer

tion around the globe . . . and, today, most analysts agree that the expected 1999 GDP growth in the U.S. will be slower than usual due to the slowdown in growth abroad.

What does all of this have to do with travel and travel science?

Everything.

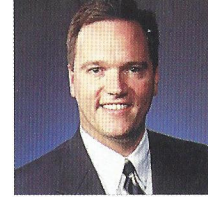
Travel and entertainment (T&E) expenses are the third largest controllable expense for just about any company, no matter where they are located, how many borders they span and no matter what they do. And in today's volatile economy, the continuous improvement of T&E control techniques can lead to a serious competitive advantage. One such technique is "business interaction management."

What is business interaction management, you ask? Business interaction management has emerged from the labs of the Thought Leaders in Travel®, Rosenbluth International, as the next evolution of business travel management. Ultimately, it is helping clients most effectively achieve their business goals by identifying the best methods to connect people and their ideas. How can this be achieved? With three things: **1) decision support framework:** a solid, scientific methodology and system to continually understand why people interact in business and why they chose their method of interaction; **2) point of**

business people travel. Why people choose to interact and how they do it will be unique to each company and vary by nature of interaction and culture, among other variables. When we discover the reasons, we can work with our clients to optimize their employees' behavior by offering alternatives to save time, energy, and money — while still achieving optimum business goals. Once the initial research has been completed, we anticipate developing a decision support framework that can provide clients with well-informed alternatives at the point of influence.

Due to global economic pressures, Rosenbluth International clients have insisted on an accelerated development schedule. In response to this, on October 12, 1998, Rosenbluth International announced a research and development effort that will formally engage client development partners, as well as academic consultants, to bring business interaction management to our clients as quickly as possible. Phased product roll outs are estimated to occur over the next 18 months, and will be reported on in this column.

The next factor is the point of influence, which occurs when business people contact their travel company to plan a trip or meeting. Rosenbluth International is evolving



Year 2000 compliance continues to be a top priority at Rosenbluth International. Our plan is designed to support a goal of Year 2000 compliance for "mission critical" systems, including VISION®, our proprietary business application, in order to process transactions for the new millennium. To date, great progress has been made toward achieving this goal. So far, we have:

- ✓ completed a full systems inventory;
- ✓ created a framework to support and identify priorities and resource requirements;
- ✓ identified and prioritized "mission critical" systems;
- ✓ initiated renovation of key applications utilizing internal and third party expertise;
- ✓ developed and implemented an internal system certification process;
- ✓ developed contingency plans for non-compliant "mission critical" suppliers;
- ✓ developed and implemented a supplier certification process;
- ✓ established a program management office with dedicated senior technical associates and external expertise;
- ✓ implemented Year 2000 acceptance criteria for new systems and applications.

Additionally, our plans include an upgrade to our current Network Operations Center and telephone switches at various Rosenbluth International locations as well as independent testing of CRS dependencies. As a part of these test plans, we will begin to book tickets in a Year 2000 test environment in December 1998.

At Rosenbluth International, we are looking forward to the Year 2000 as an opportunity to service our clients more effectively and efficiently. We continue to uncover ways in which to improve our business and enhance our current systems. We hope our clients also take advantage of some opportunities arising from this important undertaking and look at the Year 2000 as an opportunity, not an obstacle. We will continue to keep you informed of our progress by providing you with an update in November, and a compliance summary in December. Until then — keep looking forward to Year 2000!



KATHARINE ALAAMA

7673 E. San Fernando
Scottsdale
Arizona, 85255
480.419.8313

Marketing Expertise

- * Hair Care
- * Facial Care
- * Cosmetics
- * Nail Care
- * Bath
- * Hand & Body
- * Pedicure/Foot
- * Giftable
- * Personal
Cleansing



Core Competencies

Brand Management - Strategic, Tactical and Financial
Product Development - Concept Through Launch
Creative - Packaging, Promotion, Advertising, Merchandising, P.R.
Trend - Fashion and color forecasting and perspective development

OBJECTIVE

To lead the efforts
of a forward-thinking
growth oriented company
in all strategic
and executional aspects
of product and brand
innovation.

Education

University of Pennsylvania. Philadelphia, PA. 1990-1993
Master of Arts - Physical Anthropology
Thesis Topic: The Evolution of Human Language

University of California. Riverside, CA 1985-1990
Bachelor of Arts - Psychology.
Bachelor of Science - Anthropology.
G.P.A.: 3.83

Diverse and unique background in leading brand and product innovation in
both fast-paced, entrepreneurial companies as well as highly methodical,
public corporations with proven ability to succeed in both environments.

★ Year 2000 Marketing Innovation Award
- The Dial Corporation ★

REFERENCES
UPON
REQUEST

KATHARINE ALAAMA

PROFESSIONAL EXPERIENCE

The Dial Corporation. Scottsdale, AZ 1999-2001

Marketing Director - Freeman Cosmetics May 2000 - Present

Senior Brand Manager - SPC Innovations 1999 - May 2000

Computer Proficiency

MacIntosh and PC

Word. Excel.

Power Point.

Project.

Analyzer.

Adobe Illustrator.

Key Accomplishments

Designed the re-stage of the Sarah Michaels Gift Sets business to introduce a new basic and trend differentiated format that improved container designs, WIP packaging, and product mix while simultaneously increasing profitability by over 20 percentage points.

Developed and qualified the re-stage plans for the Freeman Cosmetics business, including new strategic platform, new brand packaging, new promotional strategy, new advertising and new product innovations, that generated a statistically significant, two-fold improvement in the brand's consumer purchase interest, liking and uniqueness ratings.

Designed and developed a new brand concept exclusively for launch against the prestige / salon market and the internet channel to bring incremental revenue and a three-fold improvement in profitability versus core business.

Cosmar Corporation. Div. Of Renaissance. New York, NY 1996-1999

Marketing Director - Nail & Cosmetics 1996-1999

Key Accomplishments

Invented, patented and launched a totally innovative product in Nail Art which achieved the #1 rank in dollar sales in its segment within the second week of distribution at one of the largest domestic retailers, and the #4 rank in Total U.S. Drug + Mass.

Restaged the PRO10 Nail business against new packaging, new color assortments and new product introductions that reversed a negative brand performance and delivered the fastest growth rate in the category.

Directed the entirety of the company's efforts in the Nail business, restaging the Cosmar flagship brand to restore market leadership and company profitability through product innovation and strategic re-alignment.

Developed all trend forecasts and perspectives for both core and seasonal color assortments in all eye, lip and nail businesses.

Advanced Research Laboratories. Costa Mesa, CA. 1993-1996

Marketing Manager - Hair Care 1993

Marketing Director - Hair & Skin Care 1993-1996

Key Accomplishments

Directed and executed the re-stage of Citre Shine and Thicker Fuller Hair, which generated a near-300% gross sales increase.

Conceptualized, developed and launched a total of five new brands within two years of tenure, including the company's first entry into skin care...Clear Logix which featured a patented new technology for stabilizing Retinol A, Glycolics and Salicylic Acid in a single chemical complex.

Developed and managed the growth of the company's brand management department, as well as in-house graphic design and advertising team.

Confab Companies. Philadelphia, PA 1992-1993

Assistant Brand Manager 1992

Brand Manager 1993

PAGE

2



FIDM

GRADUATION

1998



THE FASHION
INSTITUTE
OF DESIGN



MERCHANDISING



APPAREL MANUFACTURING MANAGEMENT

Saif Barhoum

MERCHANDISE MARKETING Merchandise Management Emphasis

David Carrillo
Jose Esguerra
Elizabeth Espy
Marcela Medina



FASHION DESIGN

Jenny Szeto
Kimmy Tang
In Jung Yoon

360 Olive Tree Lane
Sierra Madre, CA 91024

Dec.30, 1998

Dear Michael and Colin,

During my brief visit to Mum this past December, she was anxious to review with me some of the details of her affairs and the arrangements she desires for Paula. I was glad to accommodate her for I was unsure myself of many of the details. Moreover, Mum suggested that I put my understanding of her wishes in writing in order to minimize any possibility of misunderstanding. And so I do so now. However, I am aware of the dangers in doing so, and therefore I would not pretend that this is anything other than a first effort which is, of course, subject to amendment and correction.

GENERAL MATTERS:

1. Roger McLernon holds Mum's will which is very simple. It appoints Michael and Colin as executors, leaves 500 pounds to Francis and 1000 pounds to Margaret Brown, leaves Mum's car to Colin, and the remainder of the estate is divided equally between the three sons (or, I presume, to their estates though, in this regard I was unclear - Colin, Mike - question?)
2. Mum was unsure where the deed to the house was. My guess is that Roger McLernon holds it (Colin - do you know?).
3. George Nixon continues to do Mum's taxes for her but that is all he handles.

FINANCIAL MATTERS:

1. What Mum calls the "Big Bond" is a life assurance account (a life with profits fund) with the Prudential consisting of policies numbered 033907M000 to 033907M019. This is administered through Price Waterhouse Coopers (formerly Coopers and Lybrand), Fanum House, 108 Great Victoria Street, Belfast BT2 7AX. A woman named Jackie Holmes (01232-245454) with Price Waterhouse Coopers has dealt with Mum's questions about this investment. In Dec. 1998, this account was worth approximately 75,000 pounds and yielded about 2,000 pounds per annum paid directly into Mum's bank account. In the event of Mum's passing, this fund would become part of her estate.

2. The following are the two Superannuations (Pensions) which Mum and Paula currently receive:
 - [a] Widow's Pension (Payroll Number Q005586, SB# W110059). This brings in about 190 pounds/week. It would end with Mum's passing.
 - [b] Child's Pension for Paula (Payroll Number Q105586, SB# C110059). This brings in about 125 pounds/week. It would continue to come to Paula.
3. In addition, Paula (or Mum) receive three National Insurance (National Insurance Number WK 029806C) payments:
 - [a] Paula's Income Support Allowance, about 19 pounds/week.
 - [b] Paula's Severe Disability Support Allowance, about 50 pounds/week.
 - [c] A Caregiver's Support Allowance of about 47 pounds/week which is provided to whomsoever is caring for Paula (currently, of course, it comes to Mum).

PAULA'S SUPPORT:

1. In the event of Mum's passing, the continuing income for Paula's support from items 2 and 3 above would be:
 - [a] About 125 pounds/week from Paula's pension which I propose should be paid directly to Paula's account (see below).
 - [b] About 69 pounds/week from Paula's Income Support Allowance and Paula's Severe Disability Support Allowance which I propose should be paid directly to Paula's account (see below).
 - [c] About 47 pounds/week from the Caregiver's Support Allowance which would be paid directly to the person responsible for caring for Paula.

Therefore, aside from any other support, these funds amount to about 241 pounds/week for Paula's support.

2. I suggest that Paula's financial affairs be handled through a bank account into which items 1(a) and 1(b) would be deposited directly. Further deposits to this bank account would also be made, as needed, by her three brothers after discussions amongst themselves. (On the other hand item 1(c) would be paid directly to the caregiver.) Paula's three brothers would be jointly responsible for determining the additional support to be paid to the caregiver (beyond the approximately 47 pounds/week paid directly) and ensuring that the appropriate disbursements be paid from the bank account.
3. If she is willing to do so, I strongly suggest that Diane Brennen be responsible for administering this account as secretary and that the signatures attached to the account be Christopher, Michael, Colin and Diane Brennen. Summaries of the deposits to and withdrawals from this account will be prepared twice a year and distributed to the brothers.

4. It is Mum's wish that Nan Stuart of 13(?) Hazeldene Avenue (off the Tobermore Road), Magherafelt, take care of Paula on a "long-term fostering basis". This "Long-term Fostering" arrangement has been investigated and approved by a local Magherafelt social worker whose office is opposite the Mid-Ulster Hospital. Roger McLernon knows of this arrangement. Mum has approved and signed an appropriate agreement prepared by the social worker. It is Mum's understanding that the Stuart's have a single room in mind for Paula's use. Paula's three brothers will make an appropriate arrangement for payment to Nan Stuart from the bank account. In addition to the money for Paula's support (including board, meals and clothing), funds for Paula's pocket money (10 pounds/week or more in the future) will also be provided to Nan Stuart. Holidays will be separately funded from the bank account.

I hope that you do not mind my taking the lead in trying to iron out these details. Please do call or write if you have concerns or additions.

IMPACT OF TECHNOLOGY RESEARCH

BTI UK Hogg Robinson has been awarded the UK account of medical research and manufacturer Nycomed Amersham. The £4.5m account will be handled through the multiple's Hemel Hempstead business travel centre. BTI Bennett, Hogg Robinson's BTI partner in the Nordic region, already handles the company's travel arrangements in Norway and Sweden.

Jarvis Hotels has launched a new conference product based on market research of over 3,000 conference customers. Called Summit Conference, the product is based on service delivery rather than facilities. It includes a wide range of service guarantees and is available at 64 properties, which have over 500 meeting rooms across the UK.



The Daskalantonakis Group is developing a conference centre on the island of Crete which has a capacity of 3,500 delegates. The Group is the owning and operating company of Grecootel's 22 deluxe and four-star resort and city hotels. The conference centre will be located about two miles from the medieval town of Rethymnon near to five Grecootel hotels, which offer a total of 3,300 beds.

Report by BEVERLEY FEARIS

R OSENBLUTH International is embarking on a major research project to establish how much of its clients' travelling is absolutely necessary.

The agency claims developments in communications technology mean in some instances, there is no need to travel.

President and chief executive officer Hal Rosenbluth said: "Intuitively, we believe that a percentage of business travel is unnecessary. The challenge, however, is to identify it."

"We don't believe most people travel because they want to. We believe people travel because they feel they must to accomplish certain goals. But do they?"

The research will be led by the agency's chief travel scientist Danamichele Brunen O'Brien.

"When we discover the reasons, we can work with our clients to optimise their employees' behaviour by offering alternatives to save time, energy and money while still

achieving optimum business goals," she said.

Rosenbluth has already signed an exclusivity deal with a virtual-conferencing company, TeleSuite Corporation, under which it will be the sole business travel agent to promote the use of TeleSuite systems amongst its clients.

Unlike video conferencing, the TeleSuite system uses a patented video-mirror concept to create the other half of a room, so that participants sit facing lifesize screen images of the other members of the meeting.

TeleSuite currently provides packaged virtual-conferencing facilities for hotels in the US.

The system is likely to make its UK debut next year, when it will become one of the products displayed at Rosenbluth's new European research centre, The Continuum:

The centre is due to open next year at Rosenbluth's new London headquarters, near Old Street, which will house all its staff currently working in three London offices in Farringdon, Hatton Gardens and Jernyn Street.

ROSENBLUTH International has made two director level appointments to boost its expansion in Europe, Africa and the Middle East. **Pieter Rieder** and **Warren Funnell** have joined as directors of business development, reporting to vice-president Europe, Middle East and Africa and **India Julian Knott**.

Funnell previously worked for Kanoo Travel, which is Rosenbluth's partner agency in Saudi Arabia. He was divisional operations manager. In his new role, he will be based in Dubai and will oversee Rosenbluth's growth in the Middle East, Africa and India.

Rieder was formerly managing director of a marine travel specialist based in the Isle of Man. He will be based in London.



Funnell: based in Dublin



Rider growth plans

US-BASED business travel agency Rosenbluth International is recruiting for a general manager to head up its European call centre, due to open in Killarney, County Kerry, next month.

The centre will be known as an IntelliCenter, after Rosenbluth's three existing IntelliCentres in the US. Initially there will be 30 staff working at the centre, but the agency plans to increase this to 250 within five years.

The general manager will lead a workforce made up of account managers, team leaders, reservations staff—which Rosenbluth calls travel services associates—and technical support and administrative staff.

Most travel service associations will be dedicated to specific client European accounts and will receive extensive training.

A spokesman for the agency said it had chosen Killarney because the operating costs in Ireland were lower than in other parts of Europe.