

An Actuary in Cairo



Teaching budding actuaries in Cairo is a stimulating way to cap off an already stimulating actuarial career.

IN EARLY DECEMBER 1999, ALL OF US in the actuarial department at Swiss Re America received an e-mail from Gary Patrik, chief actuary. He was forwarding a message from ARIA (American Risk and Insurance Association) about a position teaching actuarial science at Cairo University in Egypt. Gary remarked that he was sending along the announcement “not to encourage anyone to take a sabbatical in Egypt,” but rather as evidence of “the spreading culture of our British/American actuarial science.”

I don't know how many people responded to the ARIA announcement, but it was wonderfully well-timed for me. I'd been doing reinsurance reserving in Gary's actuarial department since 1986. My 60th birthday loomed, and Swiss Re offered early retirement. Before getting into actuarial work at ISO in 1975, I'd spent 11 years as a math teacher in high schools and small colleges. The prospect of returning to the classroom was enticing.

In my actuarial work, I'd found that many others are much better than I am at intricate calculations and arcane theories, and very much better at ransacking a database. Here was a chance to return to teaching and to have a role in the beginning of actuarial studies in a very important country in the developing world.

At home that evening, I showed the ARIA announcement to my wife, Weslee. She's a psychiatric nurse and for 28 years had been teaching nursing at Lehman College, part of the City University of New York. Our three sons were on their own, we're grandparents—should we try to go to Egypt?

“Sure, give it a try,” Wes said. The decision was an easy one, a no-brainer. After working for decades in the most exciting city in the New World, we had a chance to spend some time in the most exciting city in the Old World.

And our time in Cairo has been everything we hoped it would be. For four years we've been in an area we first heard of in childhood, among Pharaonic sites and sights that were as ancient to Herodotus as he is to us, and Islamic ones that were old when Columbus was young.

Actuarial Science as a Second Language

Insurance in Egypt is dominated by four government-owned companies. The industry will eventually be privatized—Allianz and AIG already have a presence in Cairo—but it appears not likely in the next few years. Even before privatization happens, though, many of the practices in the industry need to be modernized, and actuarial skills are sorely needed. (There are fewer than 10 Egyptian actuaries.)

Measured by premium per capita, by sums assured per capita, or by premium/GDP, little insurance is sold in Egypt or in the rest of the Arab world, so the region is clearly a growth market. A developing country needs other things before it needs insurance, but once it has those things insurance is among the things it needs next. Egypt has those other things, and has begun to use insurance. More insurance will be sold in the future, so a lot of actuarial work will be done here in Cairo, and it's in the interest of everyone that much of that work be done by young Egyptians. In addition, there is great concern about the funding of retirement benefits in the very large public sector.

These considerations prompted the U.S. Agency for International Development to provide, from January 1999 through June 2003, “technical assistance”

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consisting of instruction in actuarial science. From January 1999 through June 2000, that technical assistance was provided by Michael Hubbart, FSA, Ph.D.

I began in September 2000, and the 2004-2005 academic year is my fifth year teaching actuarial science at Cairo University. My students have been third- and fourth-year students in Cairo University's Faculty of Commerce, English section. We follow the syllabi of the Institute of Actuaries, London. My courses have been Subject 104 (Survival Models), Subject 105 (Actuarial Mathematics I), and an introduction to Subject 303 (General Insurance). The Institute of Actuaries has reshaped its courses, and this year Core Technical 4, "Models," has replaced 104, and next year CT5 will replace 105.

These subjects cover life contingencies (both single life and joint life), assurances and annuities, premiums and reserves, stochastic processes and multiple-decrement Markov models, pension valuations, Kaplan-Meier and Nelson-Aalen, tests of graduation, alterations and guarantees, selection, population models, and valuation of disability benefits. This is mostly Society of Actuaries (SOA) material rather than material from the Casualty Actuarial Society (CAS), and I needed to spend some months on the steep parts of several learning curves, since most of my actuarial career was doing reinsurance reserving in the actuarial department at Swiss Re America.

Most of Subject 303 is learnable only by osmosis while working in an office, and with undergraduates we're content to introduce the most important of the vocabulary of general (non-life) insurance and reinsurance. My Egyptian colleagues teach the rest of the 101-109 subjects, along with introductions to the 300 series.

Not Quite Home

There are thousands of Americans and other Westerners in Cairo. The U.S. Embassy here is the State Department's largest, though we're told it will soon be dwarfed by the new embassy in Baghdad. We live in a spacious, three-bedroom flat in a neighborhood called Zamalek, which is the northern half of an island in the Nile. Zamalek is one of the premier residential areas of Cairo, and there are dozens of embassies nearby. The local supermarkets are much like those in the United States, though there may be only three brands of spaghetti or soap, rather than 15 brands. Our parish church is a block away. The Internet brings us the *New York Times* and the *Wall Street Journal*, posted at midnight New York time and available in Cairo at 7 a.m. The Internet also keeps us in touch with family and friends, and kept us informed about the recent births of two grandchildren.

The most popular American movies are in Cairo within a couple

of weeks of their opening in the United States. There's a fine opera house, and the Cairo Symphony Orchestra has given us many evenings of Western classical music (the tickets are about \$5!).

Many Westerners in Egypt have cars in order to take advantage of the best-in-the-world scuba diving the Red Sea provides or to go camping or exploring in the wilderness areas. My wife and I, however, find plenty to do in Cairo, and taxis serve our needs quite well. An actuary will find that taxi rides provide a good way to become familiar with Egyptian numerals. Egypt uses both Western digits—1, 2, 3, ... , which I have always called "Arabic" in contrast to "Roman," and another set that can be called "Egyptian," though they are used in most other Arab lands as well. (Morocco, Algeria, Tunisia, and Libya use only Western numerals.) Here they are, in the order 1, 2, ... , 9, 0: ١, ٢, ٣, ٤, ٥, ٦, ٧, ٨, ٩, ٠. The numerals for one and nine are the only ones very much like their Western counterparts. Those for two and three are easy to confuse; "7-Up" is a memory aid. Perhaps the trickiest two-digit numeral is ٦٥, which we would write as 65, not as 70. Positional values are the same as in the West, so the current calendar year is symbolized by ٢٠٠٥. Many consumer goods have both Western numerals and Egyptian numerals on their packages, and shops often give their prices in both forms. Vehicle license plates use these Egyptian numerals, and the first few taxi rides in Cairo let the newcomer become good enough at deciphering them.

In the months before we came to Cairo, I dutifully visited the Egyptian collections at the Metropolitan Museum and the Brooklyn Museum, and tried to get interested in all those dynasties. Soon after we arrived here, I found that I have little interest in the Pharaonic stream of the Egyptian heritage. It's enormously impressive, and those who have preserved and studied it have made invaluable scholarly contributions for which we should all be grateful. But it's thoroughly dead, and I don't want to spend my time and attention on it.

The Islamic world, on the other hand, is very much alive, and there is plenty of good material in English. With nearby mosques sounding the first of the day's five calls to prayer, I read Martin Lings' beautiful biography, *Muhammad*.

English Lessons

Cairo University is one of Egypt's largest public universities. Tuition costs vary by faculty; I think in the Faculty of Commerce the cost is under \$200 per year. The Faculty of Commerce has had a large Arabic section for several decades; there are currently about 5,000 students.

The English section began in 1991 and has around 1,400 students, about 72 percent of whom are females. About 98 per-

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cent of the students are Egyptians. Actuarial science has been taught since 1995, with the first majors graduating in 1998; through June 2004 there have been 75 graduates in actuarial science, 39 males and 36 females. The actuarial science program suffered tragic setbacks with the deaths in early 2000 of two of the founders, Drs. Fathi Ibrahim and Mohamed Mansoury; since then it has been under the able direction of Dr Galal Harby.

The English section of the Faculty of Commerce is in its own building, built in 1991. The classrooms are quite adequate, with good whiteboards and markers and overhead projectors. It's well lit and air conditioned for the several hot months. I think a fair amount of higher education in the United States is delivered in worse facilities.

English is the language for all instruction in the English section. I wish I could say, after almost five years in Cairo, that I have a serviceable command of Arabic. Alas, I know only a few dozen words, and cannot utter a single sentence. I have taken some Arabic classes, and have made sporadic efforts with little result. There is some comfort in being told by Europeans for whom English is a third language and almost as good as mine, that learning Arabic is extremely difficult; what chance, then, has a monoglot American who never even learned Spanish?

My classes have been small; this year they are 11 and 17 students. There are two 90-minute lectures each week. The students are attentive, they ask questions, and they are skilled note-takers. They are delightful to work with. Their mathematical skills are quite adequate, but like undergraduates the world over, they need prodding to spend the problem-solving hours that actuarial study requires. Their spoken English is generally adequate, but their written English is not as good as their conversation. I have adopted the practice of interrupting each lecture for a five-minute exercise in written English. I return their efforts with red-ink corrections and suggestions. These English exercises have no effect on the students' grades, but they provide some variety in the lectures. By June, after about 50 lectures, the cumulative effect is—I like to think—noticeable.

I have insisted that the students use e-mail. Some have used it for years, but others have needed to be browbeaten. If you don't have a computer at home, I said, use a friend's or go to an Internet café. All of them have done so, and during the weeks before midterms and finals I receive quite a number of e-mails asking how a certain problem should be approached, and whether a certain answer is correct. The students are also finding their way to the Internet and coming to know that for the rest of their lives much of what they will need will be obtained via Google.

Most of the students have little experience with insurance, either life or non-life. I suppose most of their families don't have residential property policies; motor liability insurance is mandatory, but the premium for private autos is only about \$10 per year.

With this in mind, I begin by telling the students that most

Americans and Europeans their age don't have life insurance. They don't have life insurance because they don't have a good reason to pay for it, and they won't get life insurance until they have a good reason. For many young Westerners, that good reason arrives with the first baby, and many new fathers learn the merits of term insurance.

Some United Nations publications allow syllabus material to be given a familiar setting. There is UNDP data about mortality and life expectancy in Egypt and the rest of the Arab world in 1970-75 and in 2000-05, together with projections of population in 2015; other data allows an Excel assignment: "The file gives you e_0 and the $IMR = q_0$; calculate e_1 for each of the 22 Arab countries."

More Than Numbers

The students are gratified that we're using the core reading of the Institute of Actuaries; they're being measured by one of the world's gold standards of professional education. There is an arrangement with the Institute whereby those students who do sufficiently well receive from the Institute an exemption for that exam.

Accordingly, we submit our final exams to U.K. actuaries deputed by the Institute to judge the exams. These are considered to be suitable alternatives for the exams given twice yearly by the Institute.

The Institute awards a Diploma in Actuarial Technique to those who complete the nine exams of the 100-level series. (Obtaining nine exemptions is an unusual accomplishment for an undergraduate, even in the United Kingdom.) The students also have the benefit each semester of a week of lectures by actuaries visiting from City University, London, stressing problem-solving techniques.

When we do problems from Institute exams, the students confront some numbers that perhaps appear to be from another world. A routine problem will deal with death benefits of, say, £200,000, which is quite a sum for a student who, upon graduation, will need to be content with an entry-level job that pays \$200 per month.

Other Institute problems present different multicultural challenges for the Arab world. A few years ago, a problem would be presented as follows: "A member of a pension scheme retires at age x exact, at which time his wife is aged y exact. . . ." A more recent exam exhibits a kind of generalization: "You are a consulting actuary to a client who wishes to invest £1m now to provide an immediate income for his partner and himself in retirement. . . ." and a male mortality table is to be used for both lives.

The latter isn't one of the problems I'll select to present in class, and the students don't ask me about it. But perhaps it strengthens the resolve of some of them to modernize but not Westernize.

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Graduates of the actuarial science program are employed mostly in the insurance industry here. It is difficult for them to continue with the higher-level Institute exams, but quite a number have been trying to do so. The professionalization of actuarial studies, and other insurance specialties, will take time—decades, not years—as it did in the United States and in Europe. (The CAS was founded in 1914, and today it's a much more substantial organization than it was when I began at ISO in 1975.)

I have been wonderfully well treated at Cairo University, by both students and staff. More than half my Egyptian colleagues have their doctorates from universities in the United Kingdom, and others have Ph.D.s or M.B.A.s from the United States—Wharton, NYU, Oregon, Florida. They have been very welcoming to me, kind and generous, and patient with my lack of Arabic. (One of my colleagues did his graduate work at McGill and wears a small Canadian flag on his lapel. I have taken to wearing a lapel pin that has the flags of Egypt and the United States, with their staffs crossed. I think it has been well received.) There have been some periods of international tension during the past few years, and not once have I met any hostility, or even coldness, from anyone at Cairo University. I hope Egyptians teaching in the United States have received similar hospitality.

More Cars Than Camels

Cairo University has a handsome campus, with many impressive buildings. Most of Cairo—government offices, the Egyptian Museum, Al Azhar, The Citadel—is on the east bank of the Nile. The university is west of the Nile, at the end of a kilometer that bears comparison with famous boulevards in Europe. With a little dusting and tidying up, Cairo University would be a good attraction for tourists with academic interests.

The walk from the university back to our flat is a little over three miles, and it is one of the delights of the day. Being a pedestrian in Cairo requires an alertness different from that needed in New York. Visitors need to learn quickly that on narrow streets cars go surprisingly fast, missing pedestrians by very few inches, and that established practices at intersections, especially, are different from ours. On wider streets, cars weave and squeeze and cut across lanes in ways not seen in the United States.

Since there are very few traffic lights in Cairo, and no stop signs, pedestrians are on their own. They make their way past one lane of traffic, then another, then wait for an opening in the next, perhaps with one child on a shoulder and another by hand. When I first saw so many pedestrians in such traffic, so often, I was sure I would soon see a death. Now that I've seen thousands of pedestrians emerge unhurt from such peril, perhaps I ought to revise my personal assessment of the risk involved.

The street scene varies by time of day and by season. Until about noon there are many produce and fish vendors; a little

later there's a great commotion as schools dismiss their students; in the evening there are families and young couples. Always there are bicyclists and motor scooters and whole families on motorcycles, some with sidecars. Most of all, there are people, crowds of people. Those who know Arabic assure me there is a lot of good-humored wit to be heard in the street-talk. I suppose I have been the object of some of that by those who see this stranger going through their neighborhood several times each week. There are plenty of reminders that Egypt is part of the developing world—sidewalks will be broken or missing; buildings will have squatters, some of them with livestock. There is all too much evidence of the continuing problem of unemployment and underemployment. There are lots of donkey carts, and once a year large herds of sheep. Camels were a common sight years ago, but only twice have I seen camels in Cairo.

I've done many miles and many hours along those routes, and they continue to be interesting. Never has it been menacing. Westerners here soon find that if you're to be a stranger alone at night with some young males approaching, be glad you're in Cairo and not in most cities in the United States.

Expatriates here often get messages from friends and family alarmed by video they've seen of demonstrations in Cairo. We see the same videos, and we're startled by them, too. It is easy for an American to be very safe in Cairo. When a demonstration is planned, the U.S. Embassy e-mails us a caution, and we avoid the area at the scheduled time. It really is that easy. The videos the world sees are utterly authentic, but they're also utterly atypical; the photographer carefully and skillfully selects his time and place and angles, guided by the desire to get footage that would be shown on CNN that evening. I suppose the process, and our response to the result of the process, is akin to the phenomenon of clustering in statistics.

During recent years, happenings in the rest of the world have resulted in some tense days here in Cairo, but I'm happy to report that my wife and I, and our friends, have experienced no anti-American hostility. Hundreds of times on Cairo streets we've heard "Welcome!," and the only evidence of the opposite has been when some taxi drivers turned up the volume of the Arabic music on their radios.

We are not at all dare devils or risk-takers. We are retired Americans who have encountered the legacies of Nasser and Sadat, Napoleon and the British, and their predecessors stretching to the dawn of time. Our visitors provided us with opportunities to revisit the Pyramids and the Sphinx, Islamic Cairo and Coptic Cairo. The Eastern Mediterranean is nearby, and we have visited Istanbul, Rome, Beirut, Petra, Damascus, and Aleppo, and have been in Florence, Venice, and Budapest for Christmas and New Year's. It has been the most interesting time of our lives. ●

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