

SEVERE ACUTE RESPIRATORY SYNDROME (SARS) AND INTERNATIONAL AIR TRAVEL: A SURVEY OF THE ECONOMIC IMPACT AND INTERNATIONAL REGULATORY CHANGES

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I. SARS AND INTERNATIONAL AIR TRAVEL: A SURVEY OF THE ECONOMIC IMPACT

THE SEVERE ACUTE RESPIRATORY SYNDROME (SARS) crisis of 2003 infected 8,462 people worldwide from November 2002 until June 19, 2003. Of those infected with the virus, 804 died. The main vehicle for viral transmission between cities and continents was the jet aircraft. The impact on the health of the victims was profound and the economic consequences for the international airline business in Canada, Hong Kong, and Singapore were devastating. The events of 2003 compounded an already difficult business environment for airlines, which were just starting to recover from the terrorist attacks in September 2001. The dreadful effects of SARS underscore the need among nation states, in a globalized economy, to work together forthrightly when confronted by a public health emergency of international concern. Unfortunately, this did not occur during the spring of 2003, and this lack of cooperation exacerbated the spread of the disease. Changes to the international health regulations (IHR) at the World Health Organization (WHO)¹ should address many of the weaknesses in the international health system that existed prior to the outbreak. In the future, public health emergencies of international concern will necessitate affected parties to act openly and cooperate with their trading partners and other international groups, like the World Health Organization. The draft amendment to the IHR, with

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¹ "The World Health Organization, the United Nations specialized agency for health, was established on 7 April 1948. WHO's objective, as set out in its Constitution, is the attainment by all peoples of the highest possible level of health. Health is defined in WHO's Constitution as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The WHO is governed by 192 Member States through the World Health Assembly. The Health Assembly is composed of representatives from WHO's Member States. The main tasks of the World Health Assembly are to approve the WHO program and the budget for the following biennium and to decide major policy questions." Online: World Health Organization <<http://www.who.int/about/en/>> (last accessed: 27 February 2004).

some changes as recommended here and elsewhere, ought to ensure that this will happen.

A. What is SARS?

SARS is a highly contagious viral infection that attacks a victim's respiratory system. Once contracted, the disease presents in two distinct phases. In the first phase, usually about one week, patients have symptoms of malaise, headache, myalgia and rigors. A fever may be present but not necessarily, although it is the most commonly reported symptom. In the second phase, usually the second week, the victim has a dry unproductive cough. The victim may also suffer from dyspnoea and diarrhoea and ultimately, experience difficulty breathing. In its advanced stages, complete respiratory failure can occur. Many victims with compromised immune systems suffer respiratory failure and end up on ventilators.

The WHO reports that the mortality rate for victims is 11%;² however, there are groups within the community that suffer higher mortality rates than others. In the elderly, the morbidity rate can be as high as 50%. Males also tend to be more susceptible to the disease than females. In children, the disease is often mild. Pregnant women have an increased risk of foetal loss in the early stages of pregnancy, and in the later stages, the expectant mother has a higher chance of mortality.

The disease is spread through contact with droplets an infected person expels when sneezing or coughing. The SARS virus has roughly a ten-day incubation period. This means that an infected victim may not exhibit symptoms or feel ill for ten days after exposure to an infected person in the symptomatic phase of the illness. All of this information was unknown at the time of the outbreak, and this "mysterious quality" of the disease caused worldwide panic.

B. What Happened?

On February 28, 2003, a doctor in Vietnam, working at a French hospital, alerted the WHO in Geneva about several cases of what appeared to be atypical pneumonia. His patients were suffering from pneumonia-like symptoms with no apparent cause. The doctor was a member of the WHO and on his advice, the WHO responded to this notification by increasing its alert level. Over the next few days, hospital workers in Hanoi and Hong

² *Severe Acute Respiratory Syndrome (SARS): Status of the Outbreak and Lessons for the Immediate Future Geneva (2003)*, WHO Doc., online: World Health Organization <http://www.who.int/csr/media/sars_wha.pdf> (last modified 20 May 2003).

Kong became ill with a similar illness that appeared to severely affect their respiratory systems. By March 12, 2003, the WHO issued a global alert. The alert indicated that there had been cases of severe atypical pneumonia without any apparent cause that had put health workers at "high risk." Interestingly, in November 2002, the Chinese government had been dealing with an outbreak of atypical pneumonia in the Guangdong province, which had infected 305 people and caused five deaths. This was not reported to the WHO until February 11, 2003.

A doctor that had been treating people in the city of Foshan, in the southern Chinese province of Guangdong, travelled to Hong Kong. The doctor arrived on February 21, 2003, and stayed on the ninth floor of a four star hotel. Guests of the hotel and those that visited the ninth floor became sick. Many travelled and subsequently infected others. Several doctors that had treated patients in Singapore and Vietnam travelled internationally, thereby seeding infections across three continents. The four main areas with a significant concentration of SARS cases were Hanoi, Singapore, Hong Kong, and Toronto. Outside Hong Kong, the main vehicle that facilitated the inter-continental or city-to-city transmission of the disease was the airplane.

On March 15, 2003, the WHO received a report about a doctor that had travelled from Singapore to the United States for a medical conference. On his way back, he telephoned a colleague and told them that he was suffering from the same symptoms as the people he had treated in Singapore. His patients in Singapore were suffering from atypical pneumonia. The colleague notified the WHO and the doctor was removed from the flight while on a stopover in Frankfurt.³ The next day, the WHO decided to increase its original alert level issued on March 12, 2003. This decision was based on five criteria:

1. The agent that was causing the disease was unknown.
2. The localized outbreaks of the disease appeared to be seriously affecting health care workers.
3. Reports from the various locales that were dealing with the disease indicated that various treatments had been a complete failure.
4. A large percentage of the people infected had ended up in respiratory failure and required intensive care.
5. The disease had moved from Asia to North America and Europe very quickly.

³ The prompt action of the German health authorities contained the disease and there was no outbreak in Germany.

On March 15, 2003, the WHO took the unique step of issuing a global emergency travel advisory, an extremely rare measure.⁴ It sought to inform health care workers, their employers, and international travellers about this threat. During the next two weeks, the disease spread rapidly and wreaked havoc on the international airline business and associated tourism industries. Restaurants, hotels, and retailers all began to suffer from the effects of a massive drop in worldwide travel.

C. The Economic Impact

On April 5, 2003, *The Economist* reported that the travel advisory and the fear of the disease were having an unprecedented effect on international business travel.⁵ On August 4, 2003, the *Globe and Mail* reported that the economic impact from SARS in Hong Kong alone cost that territory the equivalent of 7 billion Canadian dollars.⁶ Asia, long held to be the next region of the world anticipated to experience explosive growth in air travel, could not satisfy existing capacity. Corporations responded to the warnings and the reports of increasing numbers of infected people in Hong Kong and the Guangdong province by prohibiting its people from visiting the regions. In Canada, the Ontario government estimates that the SARS outbreak cost the province of Ontario 1.1 billion dollars.⁷

D. The Airlines

Many airlines suffered downturns because of the SARS crisis, however, none quite so profoundly as air carriers based in Hong Kong, Toronto, and Singapore. Hong Kong is served by two main locally-based carriers: Cathay Pacific, which is Hong Kong's premier international carrier, and Dragonair, which is the region's point-to-point short and medium haul carrier.⁸ In Toronto, Air Canada is the dominant carrier moving roughly 65,000 passengers per day throughout its route network. In Singapore, Singapore Airlines bore the brunt of the effect of the SARS crisis in the country. All four carriers suffered significant downturns in business; however, Cathay Pacific, Dragonair, and Singapore Airlines have fared

⁴ Since the inception of the WHO in 1948, it has never issued a global travel advisory prior to March 15, 2003.

⁵ "Business travellers; The effects of SARS (Crisis in corporate travel)" *The Economist* (US), 367:8318 (April 5, 2003).

⁶ "Chan fights to revive Hong Kong tourism" *Globe and Mail* (August 4, 2003).

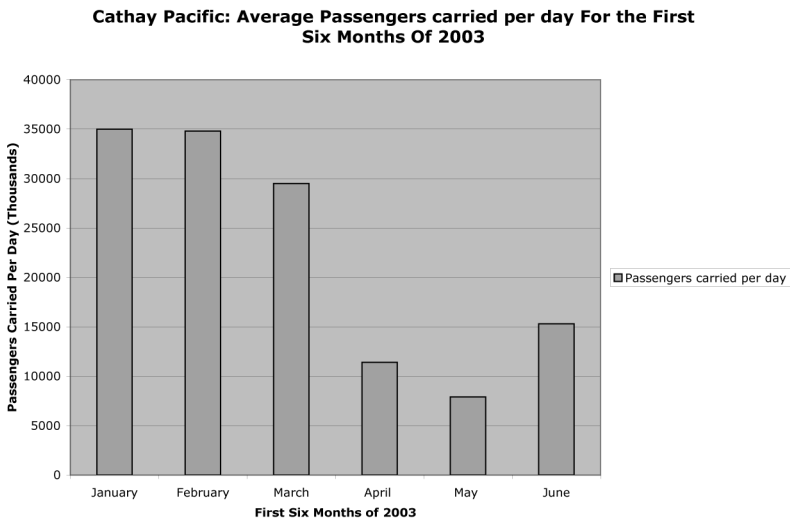
⁷ B. Laghi, "Ontario blames Ottawa for SARS fallout" *Globe & Mail* (Toronto, Canada) (September 30, 2003).

⁸ Cathay Pacific is owned by the Swire Group. Cathay Pacific owns 7% of Dragonair and the Swire Group owns 20%.

much better in the post-outbreak period than Air Canada, which has been operating under the *Companies Creditors Arrangements Act* since April of 2003.⁹

1. Cathay Pacific

Cathay Pacific, was initially reporting that its load factors were down by 75%. The company responded to the SARS threat by cancelling flights and asking its pilots and other employees to take unpaid voluntary leaves of absence, on a rotating basis, for 30 days. April, May, and June 2003 were difficult months for the carrier. The airline's passenger traffic fell at a precipitous rate. In May, Cathay normally carries 30,000 passengers per day, but its passenger traffic dipped to as low as 7,000 per day. Cathay Pacific reacted by cutting its scheduled passenger flights by 45%, and temporarily parking twenty-two wide body passenger aircraft.



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Cathay Pacific cut its available seat kilometres dramatically. The cuts were especially deep on the carrier's routes to north Asia. Capacity in north Asia was reduced by 23.7% and the load factor system-wide fell to

⁹ *Companies' Creditors Arrangement Act*, R.S.C. 1985, c. C-36.

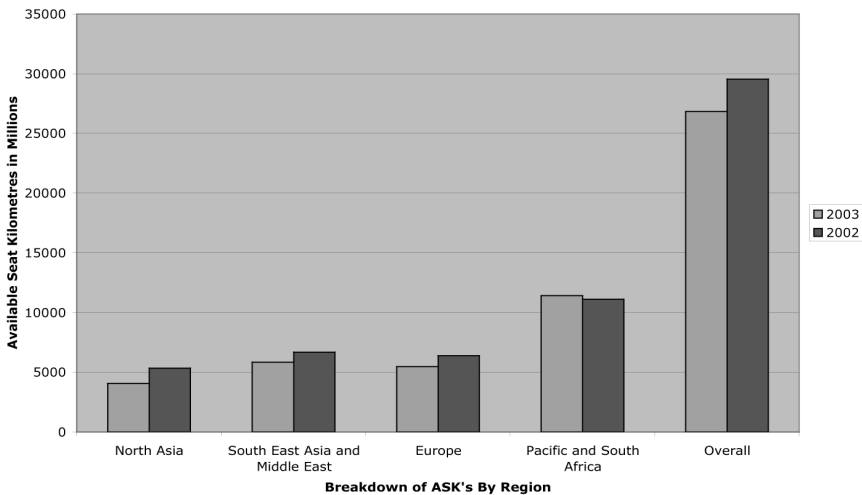
¹⁰ *Cathay Pacific Airways Limited: Interim Report 2003*, online: Cathay Pacific Airways Ltd.

<<http://www.cathaypacific.com/intl/aboutus/investor/0,,31343,00.html>> (last accessed: 2 March 2004).

64.4% from 78.1% in 2002. In the first six months of 2003, the airline carried 1.9 million fewer passengers than it had in the same period a year earlier. Passenger revenues at Cathay were down a significant 29.5%. The airline attributed some of this to uncertainty towards the war in Iraq, but it believed that it was mainly due to the SARS crisis.

Cathay Pacific had a poor year in 2003, as its revenues fell 10.6% from 33 billion (HK\$) to 29.5 billion (HK\$). Consequently, its profits fell 67.3%. Despite the effects of SARS, Cathay still managed to post a profit of 1.3 billion (HK\$), a remarkable achievement. This came largely as a direct result of the decisive actions of the company's management, and the willingness of its employees to work with the company to mitigate the effects of the outbreak.

Cathay Pacific Available Seat Kilometres



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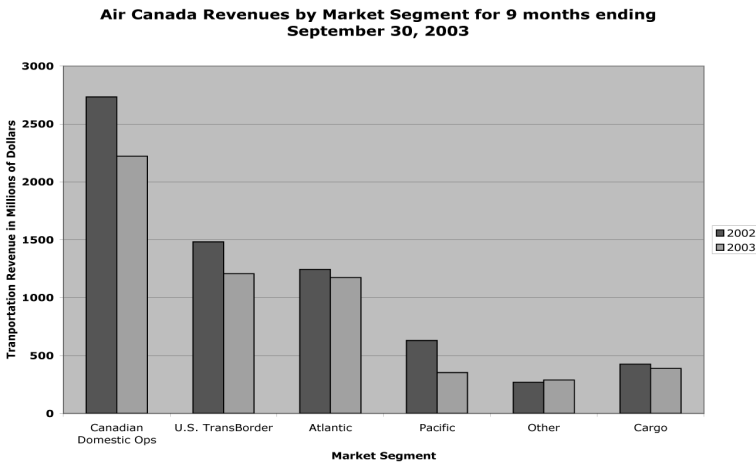
2. Air Canada

In the first week of April 2003, Air Canada entered bankruptcy protection under the *Companies Creditors Arrangements Act*. Before this, the company had been teetering on the brink of financial disaster resulting from questionable business decisions, a diminished demand for its seats resulting from the attacks of September 11, 2001, and the war in Iraq. The last profitable route network for the carrier had been thoroughly routed

¹¹ *Ibid.*

by SARS. The disease was seriously affecting the demand for its profitable Asian routes. Toronto, Air Canada's main hub and Canada's largest city, was the site of one of the most significant SARS outbreaks in the world. By June 2003, there were 245 people in Canada infected with SARS, of which, thirty-four people died.¹²

Air Canada suffered a massive decline in its pacific routes. Revenue from flights over the Pacific fell by 44% in the nine months ending in September 2003.¹³ Air Canada's largest hub is Toronto's Pearson airport. SARS had a significant impact not only on routes to Asia, but the carrier also suffered a 19% reduction in revenue derived from domestic operations. The point-to-point trans-border business between Canada and the U.S. also saw revenue fall by 19%. However, Air Canada's largest domestic competitor, Calgary-based Westjet, had minimal exposure in the Toronto market. Remarkably, Westjet saw its revenues climb by 22% in the first nine months of 2003.¹⁴



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Air Canada's international business across the Atlantic also saw a nominal decrease in revenue of six percent. Overall, operating revenue in

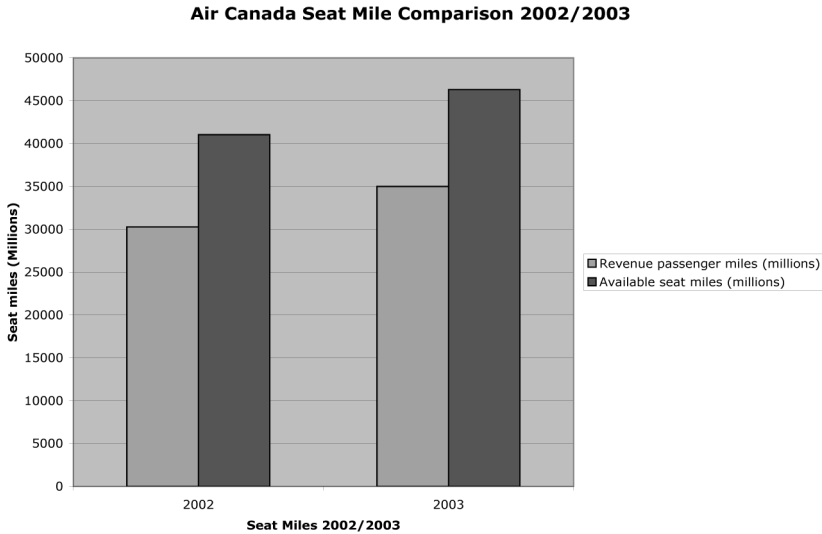
¹² Online: World Health Organization <<http://www.who.int/csr/sars/en/>> (last accessed: 08 March 2004).

¹³ *Air Canada: 2003 Third Quarter financial report*, online: Air Canada <<http://www.aircanada.ca/about-us/investor/index.html>> (last accessed 15 March 2004).

¹⁴ In 2003, Westjet had the majority of its eastern operation based in Hamilton, Ontario.

¹⁵ See note 13.

the first nine months of 2003 was reduced from \$7.583 billion to \$6.391 billion.¹⁶ This was a drop of 16% year-over-year.



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Air Canada reduced its capacity, as measured in available seat miles, by 11% in the first nine months of 2003. The number of revenue passenger miles saw a reduction of 14% on a load factor of 73.8%, versus a load factor of 75.6% for the same period one year earlier. The company's revenue per available seat mile was 14.4 cents, while the cost to the airline to produce those seat miles was 15.7 cents. In other words, it was costing Air Canada more to operate than it was receiving in revenue.

3. Dragonair

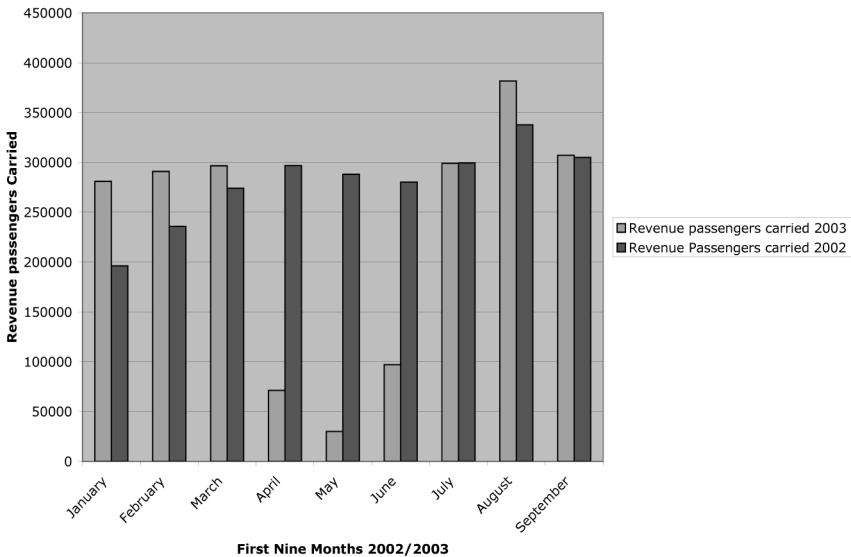
Dragonair, Hong Kong's narrow body jet operator, saw its daily loads drop from 12,000 to 750 per day. In response, Dragonair cut its capacity by more than 50% and deferred delivery of four Airbus aircraft. Dragonair carried 296,797 passengers in April 2002; one year later, the company carried 71,283 passengers, a drop of 76%.¹⁸

¹⁶ Canadian dollars (CAD\$).

¹⁷ See note 13.

¹⁸ *Dragonair: Annual Operating Statistics 2003*, online: Dragonair <<http://www.dragonair.com/icms/servlet/template?series=1&article=1870&lang=eng>> (last accessed: 15 March 2004).

Dragon Air: Revenue Passengers Carried Per Month First Nine Months 2002/2003



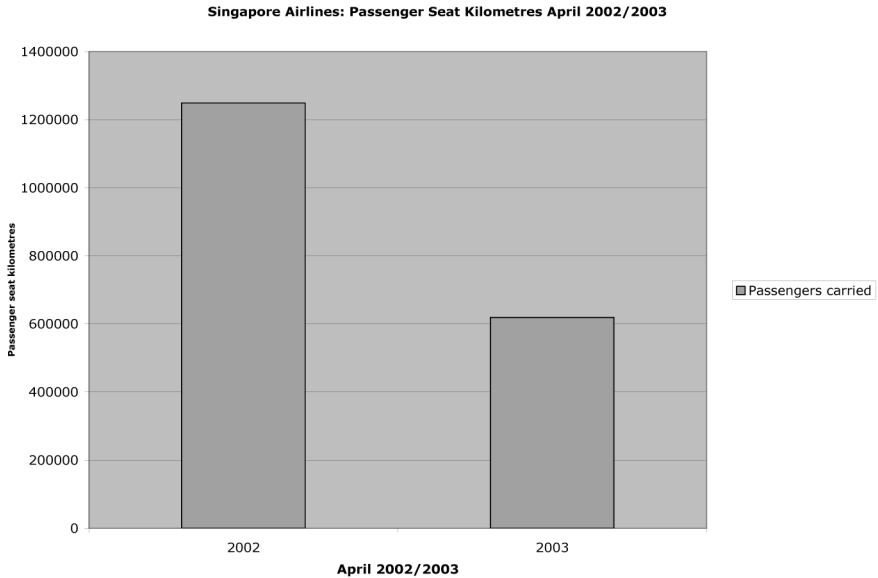
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During the height of the crisis, Dragonair parked eleven of its twenty-one aircraft. While Dragonair suffered severely during April, May, and June, the company's summer loads either met or exceeded its results from the previous year.

4. Singapore Airlines

Singapore Airlines (SIA) also suffered an unprecedented downturn in its business. In April 2003, the international airline saw its passenger numbers fall by 50%. The carrier's load factor decreased from 76.1% in April 2002 to an unprofitable 49.2%, a decline of 26.9%. The carrier responded to the downturn in business by reducing its capacity. In April of 2003, SIA reduced its capacity, as measured in seat kilometres,

¹⁹ *Ibid.*



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by 12%;²⁰ however, SIA's passenger seat kilometres fell by a substantial 43.6%.²¹

Also in April, Hong Kong's International Airport, Chep Lap Kok (CLK), originally designed to have an annual capacity of 35 million passengers, had its passenger traffic reduced by 68.9%.²³ In April 2002, CLK handled 2,923,129 passengers. One year later, at the height of the SARS crisis, CLK saw its traffic fall to 909,000 passengers. Aircraft movements at CLK dropped 30% to 12,075 movements in the month of April.²⁴ The airport

²⁰ A revenue seat kilometre (RSK) is a measure of an airline's capacity. The measurement describes the number of available revenue seats that were available at a particular time. In North America, the standard measure of capacity is the aircraft seat mile (ASM). The concept is the same, only the unit of measurement is different.

²¹ Passenger seat kilometres (PSK) are a measure of the number of kilometres a revenue producing seat, onboard an aircraft, is occupied by a paying passenger. In North America, the standard measurement for the number of miles an ASM is occupied by a revenue passenger is the revenue seat mile (RSM).

²² *Singapore Airlines Monthly Operating Results*, online: Singapore Air <<http://www.singaporeair.com/saa/app/saa?hidHeaderAction=onHeaderMenuClick&hidTopicArea=FinancialResults¤tSite=global>> (last accessed: 15 March 2004).

²³ *Hong Kong International Airport: Annual Financial Report*, online: Hong Kong International Airport <<http://www.hongkongairport.com/eng/aboutus/report.html>> (last accessed: 15 March 2004).

²⁴ A movement consists of a takeoff and landing.

authority estimates it lost \$3.5 million (HK\$) in landing fees each day during the crisis. In Canada, the Greater Toronto Airports Authority (GTAA) saw its passenger numbers fall by about 500,000 over the nine-month period ending in September 2003. This was a drop of nearly 7%.

The BBC reported that flights to China were down by 45%.²⁵ The hardest hit airlines were those that flew between Canada and Hong Kong, and overall capacity was reduced by 69% on the route. Between Europe and Hong Kong, the number of flights was reduced by 36% by June 2003. Within China, between March 2003 and May 10, 2003, the country's flag carrier, Air China, cut 2,100 flights. While other airlines were able to mitigate losses by parking airplanes and cutting capacity on unprofitable routes, the General Administration of Civil Aviation of China (GACA), the communist countries' regulator, banned the suspension of any particular air routes by its domestic carriers. GACA suggested that Chinese airlines fly smaller jets or cut route frequencies to reduce costs. This was an impractical decree by GACA, as well-managed airlines do not have "extra" airplanes with smaller seating capacities sitting idle to respond to exigent reductions in demand. Generally, well-run airlines match capacity to the demand, and maximize utilization of their aircraft and labour force. The SARS outbreak put incredible pressure on an industry already under considerable financial stress. Forcing airlines to continue to fly their aircraft empty would only exacerbate the economic damage the outbreak was having on the industry.

II. SEVERE ACUTE RESPIRATORY SYNDROME: THE INTERNATIONAL CONTEXT

A. The International Civil Aviation Organization

The International Civil Aviation Organization (ICAO) is a United Nations (U.N.) body with headquarters in Montreal, Canada. The organization began in 1944 and has grown to include 180 contracting states. The mandate given to ICAO is the "safe and orderly development of all aspects of international civil aeronautics."²⁶ The organization provides a forum for the standardization of procedures in international aviation, making it the

²⁵ "SARS Hit Airlines More Than War" (2003) *BBC News*, online: <http://news.bbc.co.uk/1/hi/business/2986612.stm> (last accessed: 02 March 2004).

²⁶ "Making an ICAO standard" ICAO Doc. Online: International Civil Aviation Organization <http://www.icao.int/icao/en/anb/mais/index_test.html> (last accessed: 25 February 2004).

natural body to deal with circumstances like those that arose during the SARS crisis. ICAO played a central role in the development of the various responses to the rapid spread of SARS as it related to the international airline business.

At the time, with the kind of exposure that the Singapore, Hong Kong, and Toronto-based carriers had experienced, it was clear there was little the airlines could do to protect themselves from the economic effects of the virus. In a futile attempt to slow the tide of passengers refusing to fly internationally and regionally in the affected areas, ICAO issued a press release that outlined the risk of contracting the virus while onboard an aircraft. It suggested there was some risk, but it was limited. The WHO however, was clearly advising against travel to SARS infected areas.²⁷ ICAO was suggesting that the risk of infection on board an airliner was limited to those in the same row as the virus carrier, the two rows immediately in front of the infected person, and the two rows immediately behind the infected person. Therefore, it suggested the risk was minimal.

In December 2003, with the clear benefit of hindsight, Dr. Sonja J. Olsen concluded that "[t]ransmission of SARS may occur on an aircraft when infected persons fly during the symptomatic phase of illness."²⁸ On a flight between Hong Kong and Taipei, passengers on a Boeing 737 had contracted the disease. They were seated up to three rows in front of an infected person in the symptomatic phase of the illness. Doctor Olsen surmised that infected patients were coughing forward, resulting in an aerosol and small droplet spread that was later inhaled by those sitting in rows up to 90 inches in front of the symptomatic patient.

The central difficulty with SARS and the airline business is that the industry is a labour-intensive service business that requires contact between people from a great many regions. In any given day, check-in staff, customs officers, security screeners, flight attendants, and others have contact with hundreds of different people. The very nature of the airline business places all of these transient people in very close proximity to those infected. This contact facilitates the spread of highly contagious diseases like SARS. However, the measures taken by the WHO and governmental health authorities were effective because by late June 2003, the WHO had lifted its travel advisories. Generally, the infection chains around the world had been broken. Therefore, it is imperative to examine what the WHO and the various governmental health authorities did to combat the spread of the disease.

²⁷ ICAO Aviation Medicine Section: *Severe Acute Respiratory Syndrome (SARS)*, ICAO Doc. Online: International Civil Aviation Organization <http://www.icao.int/icao/en/trivia/avmedsars_old.htm> (last accessed: 25 February 2004).

²⁸ S.J. Olsen *et al.* "Transmission of the Severe Acute Respiratory Syndrome on Aircraft" (2003) 349(25) *New England Journal of Medicine* 2416 at 2418.

The WHO, in conjunction with ICAO and the International Air Transport Association (IATA) and others, met in Singapore and developed eight anti-SARS protective measures to be implemented at all international airports.²⁹ The four most visible of these measures to the travelling public were:

1. Public address announcements and posters placed in the airport and SARS information pamphlets.
2. Passenger screening by check-in staff.³⁰
3. Thermal imaging equipment placed at key access points.
4. Questionnaires for disembarking passengers that asked the three WHO questions.³¹

These public measures were generally effective, although the thermal imaging equipment appeared to be a measure largely to reassure the public that something was being done. At Toronto's Pearson airport, pamphlets were available to passengers outlining SARS and its symptoms. Check-in staff was directed to ask the three WHO questions. If a passenger gave affirmative answers to the questions, they were separated and screened again by Health Canada Quarantine officers. Health Canada posted manned thermal imaging devices at various key choke points after check-in. These devices were implemented to detect a person with a temperature above normal. Even if an infected person misled check-in staff and tried to board an airplane, the thermal imaging device was an additional line of defence, notifying health authorities of that passenger's elevated body temperature. If the passenger was discovered to have a fever, he/she would be separated and screened more thoroughly by health authorities.

Passengers disembarking from international flights, including those from the United States, were given a questionnaire with the three WHO questions. They were obligated to show the completed form to Canada Customs and Revenue officers upon re-entry into Canada. Health Canada also posted staff at various choke points after the Canada Customs screening area. These choke points were also equipped with thermal

²⁹ See note 3.

³⁰ Passengers were asked the three WHO questions by airline check-in staff.

³¹ The three questions were:

1. Do you have a fever?
2. Do you have one or more of the following symptoms: cough, shortness of breath or difficulty breathing?
3. Have you been in contact with a SARS-affected person in the last ten days?

imaging devices.

Interestingly, the Naylor Report³² argues that the thermal imaging equipment was statistically insignificant as a detection device. By late August at Toronto Pearson Airport, 2.4 million people were screened by thermal imaging equipment and no one was found to have SARS. The difficulty was that the virus had a ten-day incubation period, and so infected persons might not have been exhibiting symptoms at the time they were travelling. It has been argued that visible thermal screening increases business confidence, but the science behind the technology does not support its use. At the present time, there appears to be a consensus that thermal screening does not increase public safety. If these devices were to be deployed again in the face of a similar emergency, it is likely that it would be a politically-based decision, aimed at calming a nervous travelling public.

B. Legal Issues

The issuance of a travel advisory by the WHO has tremendous economic implications for the designated state. How did the WHO develop the criteria to decide that a health advisory was warranted? The WHO's set of criteria were more severe than that of the Center for Disease Control and Prevention (CDC) in Atlanta. Essentially, the CDC categorized Toronto as a lower level threat than did the WHO. Part of the WHO's rationale for this strict application was the suggestion that less developed countries were medically ill equipped to deal with the outbreak of the SARS virus. Whether to issue a global health alert was decided by doing a risk assessment of the effects transmission would have on these less developed countries.

The Canadian government was particularly critical of these measures. Few Canadians will forget Mel Lastman, then mayor of Toronto, standing before the media and asking, "Who is the WHO?" The Naylor report suggests that the criteria for issuing a global health alert were arbitrary. Dr. Naylor argued that the criteria were developed hastily, without any consultation with the affected countries or any serious scientific debate.³³ Since serious economic consequences result from these travel advisories,

³² Canada, *Renewal of Public Health in Canada: A report of the National Advisory Committee on SARS and Public Health* (Government of Canada) (October 2003), online: Health Canada <<http://www.hc-sc.gc.ca/english/protection/warnings/sars/learning/index.htm>> (last modified: 15 October 2003).

³³ The WHO criteria consisted of a sixty case threshold of prevalent SARS patients; a three day rolling average of more than five new cases per day and local transmission. If a location fell within this criterion, a WHO advisory was issued.

Dr. Naylor and his committee suggested that the WHO establish clear criteria and a notification process by developing the guidelines in consultation with member states.

Dr. Naylor's committee also looked at the conduct of Health Canada and its method for issuing travel advisories. Health Canada's advisory system uses a three level classification ranking, in order of severity, as follows:

1. Routine advice where there is no advisory.
2. An advisory to defer all non-essential travel.
3. An advisory to defer all travel.

The committee found that the trouble with the Canadian system was that it also lacked a firm scientific basis. In fact, Health Canada's advisories, in respect of other SARS hotspots, were sometimes more severe than those issued by the WHO. At the same time it was implementing these measures, Health Canada was publicly critical of the WHO's advisory for Toronto. Adding to the irony was the fact that Health Canada was basing its advisories on the information it received from, among other sources, the WHO.

It is perhaps trite, but necessary, to suggest that Health Canada cannot have it both ways. If it is going to be critical of the arbitrary nature of the WHO criteria, it should not use arbitrary criteria of its own. The SARS crisis has underscored the need for member states of the United Nations to work with the WHO and develop a set of agreed criteria for the issuance of global travel advisories. The WHO had a logical reason for its advisories - to ensure that SARS did not spread to less developed countries with insufficient health care resources to deal with an outbreak. Similarly, Health Canada had what it thought to be a reasoned basis for its travel advisories. It was concerned that the main location where transmissions were occurring were in hospitals. The agency felt that if Canadians with health problems were to travel to affected areas, they might seek medical attention for their ailments. Naturally, travelling Canadians would attend hospitals for that purpose, and if SARS had taken root, the Canadian travellers may become infected.

The basis on which Health Canada believed that a significant number of ailing Canadians were travelling to infected areas, or for that matter, travelling at all, was not clear. Its reasoning does not seem to be supported by any scientific or statistical evidence. The reasonable person is likely to conclude that sick people do not travel on holiday. It is unclear as to why Health Canada believed that sick Canadians would be likely to travel to SARS hotspots. Rather than suggesting that Canadians defer

all non-essential travel or defer all travel to these areas, Health Canada ought to have simply notified the public of the risk, or at the very most, matched the level of advisory the WHO had issued in other SARS hotspots. Canadian citizens travelling abroad typically purchase health insurance to protect themselves while outside of the country. It is probable that, at the time of the outbreak, Canadian insurance providers would have been reluctant to provide medical coverage to ailing Canadians who contemplated travel to SARS infected areas. In this context, Health Canada's level 2 and level 3 travel advisories were probably unnecessary. One could argue that the WHO's concerns for less developed countries was *prima facie* reasonable. Health Canada's rationale, on the evidence, lacked any such reasonableness.

It is critical that health authorities worldwide develop a standard set of criteria for the issuance of global travel advisories. The effect of an overreaction or a mistake on the part of the WHO or a government health authority has the potential to have massive economic consequences for an affected area. Since the main vector for transmission of pathogens seemed to be international air travel, the effect on an industry that has very thin margins can be severe. The world's best run and most profitable airlines often only operate on a 10% margin. Most airlines do not come near this level of profitability. When demand and yields are weak, this margin is even lower. Cathay Pacific, one of the world's most profitable and best managed international airlines, had a margin of 9.1% in 2002. In the first six months of 2003, this had fallen to -10.1%; a fall of 19.2%. Carriers that are not as well-managed will suffer even greater reductions in their profit margins. This leaves these capital intensive, highly regulated businesses with little wiggle room during downturns.

Warren Buffet, one of the world's most successful investors, points out "that the global airline industry has shown a net loss since Orville Wright made his first flight on December 17, 1903."³⁴ This is not an industry that needs economic hardship needlessly foisted upon it.

C. The International Air Transport Association

The International Air Transport Association (IATA) is the association that represents member airlines worldwide on issues of concern to the industry. In 1998, IATA developed a "recommended practices protocol" to govern how an air carrier should respond when it discovers that it has carried an infectious passenger.³⁵ The protocol sets out a series of stan-

³⁴ K. McArthur, *Air Monopoly*, (Toronto: McClelland & Stewart, 2004) at xiii.

³⁵ IATA Recommended Practice 1798 Carriage of Passengers with Infectious Diseases, online: International Air Transport Association <http://www.iata.org/Whip/_Files/WgId_0263/IATA%Recommended%20Practice%201798.pdf> (last accessed: 10 March 2004).

standardized procedures when dealing with infected passengers. These procedures are simply a guide, however, and the member airline is subjected to the laws of the state in which the aircraft is located at the time of the discovery.

In Canada, the *Quarantine Act*³⁶ governs these situations. It was invoked in Vancouver when it was discovered that an infected patient had travelled on an airliner that landed at the Vancouver International Airport. Health Canada intervened and utilized its extensive powers under the Act to order the aircraft detained. Health Canada then required the affected airline to decontaminate the aircraft before it would be allowed to depart Vancouver. The difficulty for the airline was that Health Canada was unable to tell the company what it was required to do to comply with the order. The protocol for decontaminating aircraft had not been developed at the time the order was made. Situations like this beg for an international protocol to help nations and corporations effectively deal with future outbreaks.

D. The Chinese Cover-up

The earliest cases of atypical pneumonia (now known as SARS) first occurred in November 2002 in the Guangdong province in southern China. As mentioned earlier, the Chinese government did not alert world health authorities until February 11, 2003. By that time, 305 people had been infected, five had died, and the disease was already spreading beyond the mainland. Why did China cover up the outbreak? Why did the Chinese government fail to alert the WHO at an earlier date and seek international help to deal with the problem? Christopher McNally argues that "[t]hroughout the history of the People's Republic many sensitive public health matters have been treated as state secrets."³⁷ The Chinese government went so far as to order a news blackout regarding the outbreak; however, technology would undermine this state sanctioned cover-up. McNally suggests that news of the mysterious illness spread faster than the disease itself by way of text message, the internet, and good old-fashioned word of mouth.

The Chinese authorities alerted the WHO on February 11, 2003, but continued with the news blackout at home. They followed this policy until April 20, 2003, while continuing to report their infection numbers to the WHO. The damage that was occurring to their reputation worldwide was significant. After April 20, 2003, the Chinese government, under worldwide pressure, began cooperating with the WHO and others. As vigorously

³⁶ *Quarantine Act*, R.S.C. 1985, c. Q-1.

³⁷ T. Koh, A. Plant, & E.H. Lee, *The New Global Threat: Severe Acute Respiratory Syndrome and its Impacts*, (River Edge N.J. World Scientific, 2003).

as they had covered up the outbreak, they mobilized Chinese society to combat the crisis. The government ordered 4,000 construction workers to flatten an old communist resort and build a 1,000-bed hospital. They managed to do this in a little over one week. Neighbourhood organizations were mobilized to visit the homes of people in the community searching for sick people. Ultimately, strangers were barred from entering neighbourhoods if they were not normally residents of the neighbourhood they wanted to visit.

The initial policy of intransigence was likely a significant factor that assisted the spread of the disease and the eventual foothold it had in China. The Chinese authorities' reluctance to be open and forthright is likely, in part, responsible for one of the modern world's largest economic catastrophes. The Chinese government's reluctance to tap into available worldwide knowledge and expertise to help them deal with the initial outbreak in Guangdong was a significant contributing factor that aided the spread of the disease.

III. THE INTERNATIONAL HEALTH REGULATIONS

THE WORLD HEALTH ORGANIZATION has a legal framework that governs its interaction with member states and outlines procedures to deal with outbreaks on ships and aircraft that arrive at seaports and airports, and outbreaks that occur within the member's territory. These are known as the International Health Regulations (IHR). The IHR outline the contact protocols that should occur between the WHO and member states. The existing document, while lengthy, is rudimentary and was drafted at a time before advances in technology allowed the rapid transfer of information via the Internet and through other electronic media. The IHR have been the subject of much debate in the post-SARS period. Currently, there is a proposal to amend the regulations and apply the experience the WHO has gained from the SARS outbreak in a more sophisticated manner.³⁸

A. Proposed Changes to the IHR

Under the existing protocol, the main contact point between the WHO and the member state is the member state's health administrator. In Canada, this is Health Canada. However, in our federal state, the delivery of health care falls under the provincial head of power.³⁹ The problem is

³⁸ World Health Organization Intergovernmental Working Group of the Revision of the International Health Regulations, *International Health Regulations Working Paper for Regional Consultations*, IGWG/IHR/Working paper/12.2003, 12 January 2004.

³⁹ *The Constitution Act*, 1867 30 & 31 Victoria, c. 3. (U.K.) S. 92(7).

that if the sole contact point between the WHO and the state is a state department, the information released to the WHO may not always be accurate for a variety of political or economic reasons. As we saw in the Chinese example, there was a massive state-sponsored cover-up, and China's health authority was complicit. This presents difficulties for the WHO. Although they must respect the sovereignty of the nation state, they must work to protect the well-being of the wider population. The existing rules only work well when all parties comply with them. Delay and obfuscation on the part of intransigent member nations can seriously affect the efficacy of the measures used to fight a burgeoning epidemic.

Under the new protocols proposed for 2005, WHO member states must set up a national IHR focal point. Communication protocols will be established and officials at the national IHR focal point must be contactable at all times. Any communication with the focal point will be considered to be a communication with the member state's health administration. This slightly alters the former protocol that only provided for contact between the health administration in the member state and the WHO. Presumably, the idea is to focus command and control to a single point rather than deal with a large amorphous bureaucracy. This appears to be a positive change.

Singapore was very effective with its command and control procedures and was lauded by the international community for its efficacy during the SARS crisis. The country had a strong single point of contact that communicated with the WHO and coordinated its fight against the disease. It appears that the new regulations will attempt to model the experience in Singapore. It is contemplated that this new procedure will allow for the timely flow of information between the WHO and its member states. As we saw during the SARS crisis, the timely flow of information can be critical in the fight against the spread of a highly contagious pathogen.

The new regulations go further and provide for surveillance mechanisms lacking in the existing regulations. It is noteworthy that, as a matter of practice, the WHO has been actively involved in worldwide medical surveillance for some time. For example, since 1997, the WHO, with the help of a search engine developed by Health Canada called the *Global Public Health Intelligence Network* (GPHIN), has been continuously monitoring the internet for health-related rumours and news. In fact, the GPHIN raised the first alert that something might be happening in Asia as early as November 2002. The legal mechanisms proposed in the amended IHR mandate mean that not only will the WHO be active in world-wide health surveillance, but that local authorities must develop surveillance practices to detect and report public health risks and events that potentially constitute public health emergencies of international concern within

their territories.

In addition, for the first time, the WHO will have authority to engage other sources of information outside the traditional health administration. This information, which may be gathered under the proposed Article 7, must be verified in accordance with the procedure under Article 8.⁴⁰ It allows the WHO to critically examine the information communicated to it by the health administration through the national IHR focal point. It also allows the WHO to assist member states lacking the medical infrastructure to detect an outbreak of a contagious pathogen by collecting third party information, and then communicating that information back to the states' health administration.

As discussed earlier, many countries, particularly Canada, were critical of the WHO's reaction to the SARS outbreak and its issuance of global travel advisories. Canada complained that there was little or no consultation with the affected member states. The new regulations specifically recognize the significant economic impact an erroneous travel advisory might cause in a suspect region. The regulations are sensitive to this concern and seek to balance the goal to "provide security against the international spread of disease while avoiding an unnecessary interference with international traffic."⁴¹ The new IHR, specifically Article 8, has a procedure for the verification of information that is acquired from non-official sources.⁴² Once information is obtained that suggests a public health risk that potentially constitutes a public health emergency of international concern, the WHO will confer with the member state's health administration. The process, which may or may not be expedient, has a grievance procedure should a dispute arise. The dispute mechanism is found in Article 47 and detailed in Annex 10.⁴³ If a dispute arises, it will be heard before a review committee and the committee will make recommendations. If the review committee does not settle the dispute, the dispute may be subject to voluntary binding arbitration.

All of these proposed changes to the IHR are laudable, but are only effective if the member state is committed to the goals of the WHO. The IHR lay down a minimum standard of conduct by affected parties; however, there are few negative sanctions available to the WHO to enforce compliance. The most significant measure that can be taken to ensure compliance is political pressure. International political pressure led the Chinese government to mobilize their society to fight the SARS infection after months of denying a problem existed. International political pressure remains the most effective means to cajole a nation state to work in con-

⁴⁰ *Supra* note 38.

⁴¹ See note 38.

⁴² *Ibid.*

⁴³ *Ibid.*

junction with the WHO to prevent the spread of communicable disease.

Since the draft proposal of the new IHR was made public, the WHO has asked for and received opinions from industry and government on the proposed amendments. The airline industry responded through the International Air Transport Association (IATA).

B. The International Airline Industry Responds

IATA's concerns over the requirements to be met under the new IHR proposals are numerous, but can be described as falling into two broad categories. The first are economic concerns, and the second are operational matters. Under the first category, IATA is worried that certain ambiguous terms may lead to the imposition of fines or penalties on member airlines and they strongly suggest clarification of these ambiguous terms. There are certain industry specific terms that are not used in the IHR. IATA believes that by not adopting these terms, this may lead to confusion and the potential for negative economic consequences for its members. For example, in the air cargo transport business, the standard container used is the unit load device or "ULD." Nowhere in the language of the regulations does the WHO refer to the ULD. IATA goes so far as to suggest that the lack of inclusion of the term excludes the ULD from the regulations.⁴⁴

IATA's interpretation of this exclusion is questionable. It is unnecessary to include a description of every type of device that is used in the cargo transport business. It is sufficient to broadly define a term to be generally inclusive. Technologies change and as such, a specific definition that outlines a ULD may be applicable today, but in the future, it may be irrelevant. From a legal perspective, if the WHO were to outline each industry-specific term, this action would imply that those items not specifically included might, by design, be excluded. The most comprehensible approach would be to conclude that the intention of the regulations is not to exclude terms. This interpretation would be in accordance with the general public policy purpose of the regulations as outlined in Article 2. The broad purpose of the regulations is to provide security against the international spread of disease, while avoiding unnecessary interference with international traffic. The articles that give effect to that purpose should be construed in the broadest possible terms. When the IHR amendments are read broadly, they implicitly include all types of shipping containers.

IATA also expressed concern over the lack of specific terms relating

⁴⁴ Comments of the International Air Transport Association (IATA) on Draft International Health Regulations, Online: World Health Organization <<http://www.who.int/csr/ihr/revisionprocess/en/iatacomments.pdf>> (last accessed: 10 March 2004).

to aviation and industry-specific requirements in Article 21(1), which it sees as being problematic for the industry.⁴⁵ Nevertheless, the language employed by the drafters of the IHR is sufficiently broad to be inclusive of all modes of transportation. IATA should not be overly concerned with language that does not specifically mention aviation and terms particular to the industry.

In an operational emergency where an aircraft is found to have a person with an infectious disease aboard, IATA is troubled that the regulations may give the WHO the power to deny the aircraft authority to land. This is not likely to occur. There is often insufficient time to debate a suitable destination airport with an international agency. The political ramifications would be extreme for the WHO if it denied a commercial airliner in distress the authority to land because there was an ill passenger aboard the aircraft. It would be even more severe should the hull and passengers be lost as a result, and for that reason, any suggestion that the regulations as written might lead to this result is absurd. The language chosen in Article 21(1), providing the WHO with the ability to deny a "conveyance" the right to enter a nation state, is limited and certainly does not apply to any conveyance in distress.

IATA is concerned with Article 21 ostensibly because it appears to limit the powers of the pilot-in-command. Does the article really limit these powers? It does not. In Canadian law, under the *Aeronautics Act* and the Canadian Aviation Regulations, the pilot-in-command is the ultimate legal authority over an aircraft. Most nations that are members of the International Civil Aviation Organization provide the same legal authority to pilots. Operational decisions ultimately rest with the pilot-in-command. In the commercial context, the pilot-in-command's authority, while absolute at law, may be constrained by his/her employment contract. So while IATA is concerned that the IHR may limit the pilot-in-command's authority in certain circumstances, this authority is actually held by the corporation that employs the pilot. IATA does not represent pilots, but instead represents their employers. Therefore, while IATA appears con-

⁴⁵ World Health Organization Intergovernmental Working Group of the Revision of the International Health Regulations, International Health Regulations Working Paper for Regional Consultations, IGWG/IHR/Working paper/12.2003, 12 January 2004.

Article 21(1): Unless otherwise recommended by WHO, or authorized pursuant to applicable international agreements, a conveyance shall not be prevented for public health reasons from calling at any point of entry. If the point of entry is not equipped for applying measures under these Regulations, the conveyance may be ordered to proceed at its own risk to the nearest suitable point of entry convenient to the conveyance, unless the conveyance has an operational problem which would make this diversion unsafe.

cerned with a diminution of the pilot-in-command's power, the organization's focus is really an attempt to ensure that its members' powers are not constrained.

Whatever IATA's motivation, its concerns seem unwarranted. Commercial decisions cannot be the overriding factor when dealing with a health emergency. The purpose of Article 21(1) is ostensibly to give the WHO the authority to direct aircraft and other conveyances to destinations that are suitably equipped to deal with a potential outbreak of a highly contagious pathogen. This serves both an obvious and laudable public policy purpose and a broad economic purpose. The spread of a highly contagious pathogen like SARS, as outlined earlier, had a tremendous negative impact on the world economy and, while directing a conveyance to a particular destination might cause a particular corporation economic hardship, it may prevent economic hardship in the broader economy. The risk to the individual corporation can be hedged through the purchase of insurance. If insurers are unwilling to underwrite this risk, then perhaps governments can indemnify international transportation companies against those risks. Health is a public policy issue and governments are the most suitable institutions to deal with these issues. Industry ought to discuss any concerns over insurance with their respective governments.

C. The American Response to IHR's Proposal

As of April 27, 2004, the most comprehensive government response to the proposed amendment to the IHR came from the United States of America. The U.S.'s concerns can be broadly grouped into three categories. The first are technical legal concerns. The second are concerns relating to the legal language chosen for certain definitions. Finally, the third broad category is concerned with sovereignty issues, including the contemplation of terrorist acts utilizing biological weapons or other biological hazards.

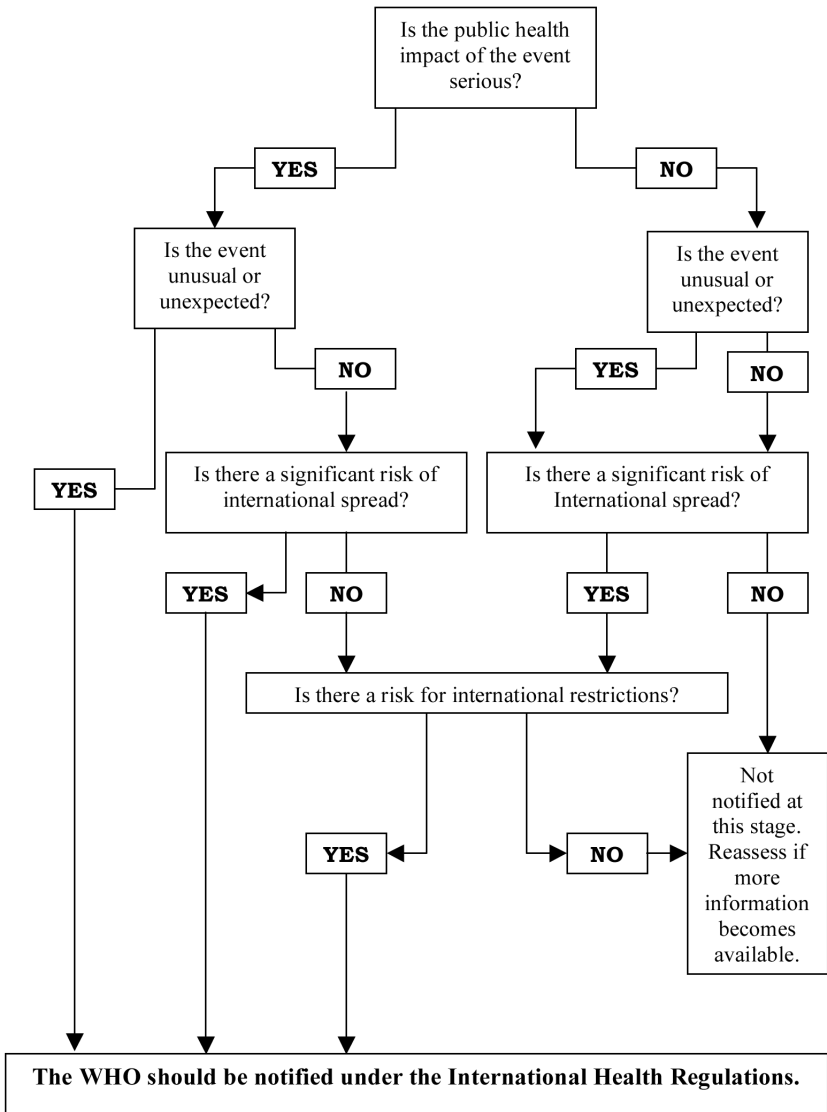
1. Technical Legal Concerns

The U.S. raises some valid technical legal concerns of how the regulations might operate in practice. After the SARS outbreak, it was suggested that the IHR failed because the document only had a limited number of listed diseases that would require member states to report an outbreak to the WHO. Originally, these diseases were limited to plague, cholera,

and yellow fever.⁴⁶ A broader more inclusive mechanism was required to deal with new pathogens that would have a similar effect to the listed diseases. The response to this failure of the original IHR was to develop an algorithm, which is essentially a decision tree. The algorithm found in Annex 2 is as follows:⁴⁷

⁴⁶ *International Health Regulations*, online: World Health Organization <http://policy.who.int/cgi-bin/om_isapi.dll?infobase=Ihreg&softpage= Browse_Frame_Pg42> (Last accessed: 15 July 2004).

⁴⁷ The flowchart is augmented with a more sophisticated series of following questions and considerations. The chart as depicted is only the basic outline of the algorithm.



The Americans argue that the algorithm is a concept that they support; however, it is not the only solution to the problem of deciding what exactly constitutes a "public health emergency of international concern." In addition to utilizing the algorithm, a disease-specific list is necessary to immediately trigger the notification provision in Article 5.⁴⁸ Japan and New Zealand also support the inclusion of a disease-specific list.⁴⁹ The Americans argue that a disease-specific list should be expandable as we collectively increase our medical knowledge and identify new pathogens. The American view is that the algorithm as a "non-specific construct" is open to interpretation, and the public policy purpose of the IHR is not served if decision makers are re-applying the algorithm to questions that are well settled. In addition to being time consuming, it is intellectually unnecessary and leaves previously settled questions, as to what has constituted a public health emergency of international concern, open to re-interpretation. The question becomes how do we establish what particular diseases ought to be included on that list? The Americans suggest five criteria as follows:

1. Communicable diseases that can be spread through the droplet or aerosol route and have life-threatening or severe consequences;
2. Selected communicable diseases among those eradicated or targeted for eradication by the WHO;
3. Communicable diseases without an effective control strategy or for which isolation is deemed an essential part of the control strategy, which are transmitted easily from person to person and which, if spread in the population, would have severe public health consequences, including potentially high case fatality rates;
4. Selected vector-borne diseases that can be translocated to non-endemic countries with compatible vectors;

⁴⁸ See note 38.

⁴⁹ *Japanese MHLW Comments on the Draft of the Proposed Revision of the International Health Regulations (IHR)* online: World Health Organization <http://www.who.int/csr/ihr/revisionprocess/en/japan2004_30_04_.pdf> (Last Accessed: 15 July 2004), [*New Zealand*] *General Comments to WHO on the Draft of the Revised International Health Regulations - Document IGWG/IHRWorking paper/12.2003*, online: World Health Organization, <<http://www.who.int/csr/ihr/revisionprocess/en/NewZealand.pdf>> (Last Accessed: 15 July 2004).

5. Selected zoonotic diseases that occur in humans and which pose a potential public health risk to human populations.⁵⁰

These are technical medical provisions best debated by informed medical professionals. Indeed, the U.S. suggests that whether or not a specific disease ought to be included should be periodically reviewed by the IHR advisory panel. The IHR advisory panel should be consulted to determine whether the technical criteria outlined above are sufficient guidelines to conclude whether or not a specific disease is included on the list. Before adopting this proposal, it is also necessary to invite comments from member states and their health professionals to determine if the American criteria, as provided, have scientific merit.

2. American Comments on Legal Definitions

The legal concerns the Americans express relate to the fundamental definition of "public health emergency of international concern." The U.S. is concerned the term is not sufficiently defined, and in this circumstance, they believe that specific language is required. Although the definition is critical to the success of the document, nowhere in the definitions section of the proposed draft of the IHR is the term defined. The U.S. suggests a definition that includes both a positive determination utilizing the algorithm and the inclusion of their proposed disease-specific list. The proposed U.S. definition reads as follows:

"[P]ublic health emergency of international concern" means the occurrence or suspected occurrence of any of the listed diseases appearing in Annex 2 or a public health event determined by the health administration of a State or WHO to be a public health emergency of international concern using the algorithm in Annex 2.⁵¹

This definition is a key requirement, particularly if the WHO decides to wisely accept the notion of complementing the algorithm with a disease-specific list. If the WHO elects not to accept the disease-specific list, it nevertheless makes good sense to clearly define this key concept. The definition would, at the very least, make the IHR more comprehensible.

⁵⁰ *Second U.S. Government Comments on The First Draft of the Proposed Revision of the International Health Regulations*, April 27 2004, online: WHO <<http://www.who.int/csr/ihr/revisionprocess/en/ihruscomments.pdf>> (Last accessed: 15 July 2004).

⁵¹ *Ibid.*

3. Sovereignty Issues

The third significant category of concern outlined by the U.S. has to do with sovereignty issues and, to some degree, the implications that bio-terrorism may have under the operation of the IHR. It can be argued that historically the United States has resisted any multilateralism that would have the effect of eroding its sovereignty. The American position, in respect of the IHR, is informed by this historical resistance to multilateralism. Their position is unjustified.

Industry representatives have been critical of Article 21(1) for ostensibly limiting their authority. This article also raises similar concerns for the United States. Article 21(1) reads:

Unless otherwise recommended by WHO, or authorized pursuant to applicable international agreements, a conveyance shall not be prevented for public health reasons from calling at any point of entry. If the point of entry is not equipped for applying measures under these Regulations, the conveyance may be ordered to proceed at its own risk to the nearest suitable point of entry convenient to the conveyance, unless the conveyance has an operational problem which would make this diversion unsafe.⁵²

The U.S. suggests the word "shall" in the first sentence ought to be changed to "normally should." The U.S. argues that the term "shall" infringes upon a nation states sovereignty by denying member states the ability to take measures they believe are necessary to protect their citizens, which presumably includes the ability to direct a conveyance away from American soil. It is clear that this concern cannot be directed at international air travel, but instead at the international shipping business. An ocean going vessel's destination choices tend to be more flexible, and there is a greater threat from ships as they often carry vectors (animals and insects) that may transmit communicable disease. Also, it is likely that the American position is influenced, to some degree, by their concern over terrorism.

Operational requirements preclude aircraft from having numerous destination options, particularly late in a flight when fuel reserves are limited. For transoceanic flights destined to the northern U.S. or Canada, there are two options: the United States or Canada. There are no other operationally feasible options. It is not likely that American or Canadian governments are going to allow an airliner full of passengers to crash into

⁵² See note 38.

the ocean or somewhere over Canadian or U.S. territory. It is unclear as to why the U.S., in respect of aviation, would be critical of the WHO's language as written. The practical operational reality of international air travel, and the obvious moral and political considerations, would preclude them from exercising such a sovereign authority to deny entry even if it were acknowledged in the IHR. In the world of international shipping, where things move at a much slower pace, this authority that the Americans want acknowledged is a practical one that could be exercised with little or no catastrophic effect (and it is perhaps the international shipping business to which this concern is directed).

4. Terrorism

Article 41 of the proposed IHR requires that member states provide information to the WHO in the event of a suspected intentional release of biological, chemical, or a radio nuclear agent. This could be construed to mean the intentional testing of these substances, but more likely, the article is concerned with the release by terrorists. The United States and Japan, which have both suffered recent terrorist attacks on their soil, are equally concerned about the provisions in Article 41.

The Japanese are concerned that the WHO is the wrong authority to deal with an intentional release of a radio nuclear or a chemical agent that poses a health risk to an affected member state.⁵³ They argue that reference to these types of events ought to be removed completely from the IHR. This would have the practical effect of removing the WHO from any position of authority in those circumstances. The Japanese argue that the practical authority and expertise to deal with these matters rests in other agencies. The issue for the Japanese is that when dealing with such an emergency, the practical realities would prevent the affected member state from complying with the IHR.

While the purpose of the IHR is the prevention of the spread of communicable disease without unnecessarily disrupting international traffic, the WHO also has a tremendous level of medical expertise and access to resources. To remove the WHO from the equation would be, in effect, removing a vital organization that has the ability to make meaningful contribution. The WHO has extensive contacts around the world and can act as a focal point for the dispatch of worldwide medical expertise and resources. The WHO is a valuable organization, and if for no other reason than expert consultation, should play a role in circumstances contemplated by Article 41.

It is also conceivable that an intentional release of radio nuclear or

⁵³ See note 54.

chemical material has the potential to cause a large number of deaths. A medical system in a member state that is overwhelmed by a large number of deceased persons has the potential to experience outbreaks of cholera and other diseases. The outbreaks of secondary diseases that, for example, contaminate drinking water, have the potential to become a public health emergency of international concern. For this reason, the reporting of these sorts of incidents ought to be contemplated in the IHR.

The American concerns are similar to the Japanese concerns with respect to Article 41. The Americans question the WHO's participation in a situation where there is an intentional biological, chemical, or radiological release that poses a limited threat to the overall public health of a member state, and is not likely to spread beyond its border. In this type of situation, it seems clear that there would be a role for the WHO. First, the intentional release may cause the outbreak of other secondary diseases that may pose a public health risk and ultimately lead to a public health emergency of international concern. Second, these incidents must be reportable as they may occur again, and they may occur in a member state's jurisdiction.

The point here is not that the spread of communicable disease must originate from the initial intentional release of the biological source, chemical, or radio nuclear material, but that the material is released again in another member state by a terrorist, causing a public health risk in that secondary location. A series of coordinated intentional releases of biological, chemical, or radio nuclear material would constitute a public health emergency of international concern.⁵⁴ The vector for transmission of the disease-causing agent in this case is not an "insect or other animal,"⁵⁵ but a person or persons. The regulations ought to contemplate human actors as vectors and deal with the public health emergencies that result from their nefarious actions. This notion that humans may act as vectors for the transmission of disease via an intentional release of biological, chemical, or radio nuclear material makes it appropriate to include in the definitions section of the IHR some reference to this unpleasant fact.

The United States argues that the algorithm has the ability for a member state to avoid reporting an intentional release. If it is desirable to have the WHO involved in these types of incidents, the U.S. argues that the algorithm must include the intentional release of radio nuclear, chemical,

⁵⁴ Al Qaeda has organized multiple simultaneous attacks in the recent past. The terrorist organization coordinated simultaneous attacks on August 7, 1998 when they attacked American Embassies in Kenya and Tanzania and they were also responsible for the September 11, 2001 attacks in New York and Washington D.C.

⁵⁵ See definitions section of the IHR.

or biological material. As it stands now, the reporting requirement may be avoided in the algorithm in this instance. The inclusion of the intentional release of radio nuclear or chemical material in the algorithm is a good policy measure. However, for further clarity, it may also be included on the disease-specific list. By doing so, little is left to interpretation by an affected member state. In effect, if a member state is the victim of an intentional release, then it must report this fact to the WHO. The WHO can then notify other members, as per Article 5, that there has been an intentional release and it can individually assess the risk and decide what pre-emptive measures to take. In situations where the intentional release leads to a public health risk that does not constitute a public health emergency of international concern, the proper role for the WHO would be as consultant at the request of the reporting state. The WHO should be prepared to provide whatever assistance a state requires according to its mandate.

IV. CONCLUSION

THE SARS OUTBREAK HAS LEAD to many professionals in aviation, medicine, and the law to consider a variety of operational, legal, and policy questions. It is likely the airlines will continue to be one of the methods for transferring pathogens between continents in the future. If we are going to accept international air travel as a fact of modern life and require these organizations to act as businesses, then it is imperative that world health authorities develop standardized criteria for establishing health alerts. The experience so far has been a positive one, and some real changes are on the horizon. Governments are already responding to the proposed amendments to the IHR. In fact, the Canadian government in the March 2004 federal budget has provided funding for the establishment of a national IHR focal point as required by Article 3 of the amendment.⁵⁶ By the end of 2005, and after the next sitting of the World Health Assembly, the amended IHR should be in place, providing the WHO with an effective method to fight the international spread of communicable disease. The consultation period has afforded the WHO invaluable and informed commentaries from various stakeholders. The WHO has done a commendable job of compiling a thoughtful series of regulations, while taking into account the feedback it has received from both industry and government. The final set of regulations ought to enable the WHO to effectively deal with the next public health emergency of international concern.

⁵⁶ *Budget Plan 2004*, online: Government of Canada <<http://www.fin.gc.ca/budget04/bp/bpc1e.htm>> (Last Accessed: 15 July, 2004).