

Tomorrow's Air Travellers to Stay Plugged in to Office

WASHINGTON - Three United Airlines 747s outfitted with some unusual equipment are plying the trans-Pacific routes these days. Tiny antennae on their fuselages beam communications signals not down but up, to a satellite, carrying periodic position reports and such on-board readings as fuel reserves and engine temperature.

No matter how far out the planes fly, the data can be expected to arrive on land in clear, reliable form by air traffic controllers and ground technicians. For these jets, the days have passed in which planes are essentially invisible and on their own once they leave the shore behind, like sailing ships of old.

With experiments like this, satellite communications are coming to the world's airlines for use in the cockpit, and in the passenger cabin, too. British Airways has tested a passenger phone on a jet flying between Europe and North America, allowing people to call home from 30,000 feet (9,150 meters) over the Atlantic, at \$10 a minute.

Costs are high, to the point that some analysts are not convinced the technology will

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by John Burgess.

most as if they were still at their desks, making telephone calls, sending faxes.

Aircraft makers such as Airbus Industrie are offering to put work cubicles in jets' cabins. Inside, travellers could have privacy, room and full access to communications with out disturbing fellow passengers. They would pay dearly for the right, but some companies prefer that to having highly paid executives out-of-pocket for the flight's long duration.

The technology can handle in-coming calls. But most airlines are leaning against allowing that in the belief that attendants running up and down aisles looking for people would disrupt the peace of others.

Many analysts, in any case, suggest that phone calling will not be what makes or breaks the service.

The backbone of the system is going to be data services, to begin with," predicts Edward Cheramy, president of IDB Communications Group, a Culver City, California, firm that is in a consortium competing with Comsat's.

Lofting skyward in quick bursts, data is inherent in low cost to send. There are many potential uses.

A passenger with a laptop computer, perhaps plugged into her armrest, might send or receive electronic mail while on a flight from Miami to Buenos Aires. Or, flight attendants on a Singapore-to-Honolulu flight that was running late might message ahead by keyboard to request reservations on alternate flights for individual passengers.

Currently, pilots use high-frequency radio to communicate to land from the ocean.

Sensors installed at strategic points in the aircraft could provide to airline headquarters, via satellite, a running update on the condition of the plane—engine heat, body stress, etc. Ground technicians would monitor these readings and contact the crew, by satellite, if there was any cause for concern.

Satellites could also extend the view of air traffic controllers. Currently, jets vanish from controllers' radar scopes a few hundred miles offshore.

NEW TECHNOLOGY TELESCOPE

After seven years of development and construction, the European southern Observatory ESO has been able to put a new type of telescope into operation. In spite of its comparatively small size, this telescope immediately assumed a leading position amongst the earth's telescopes.

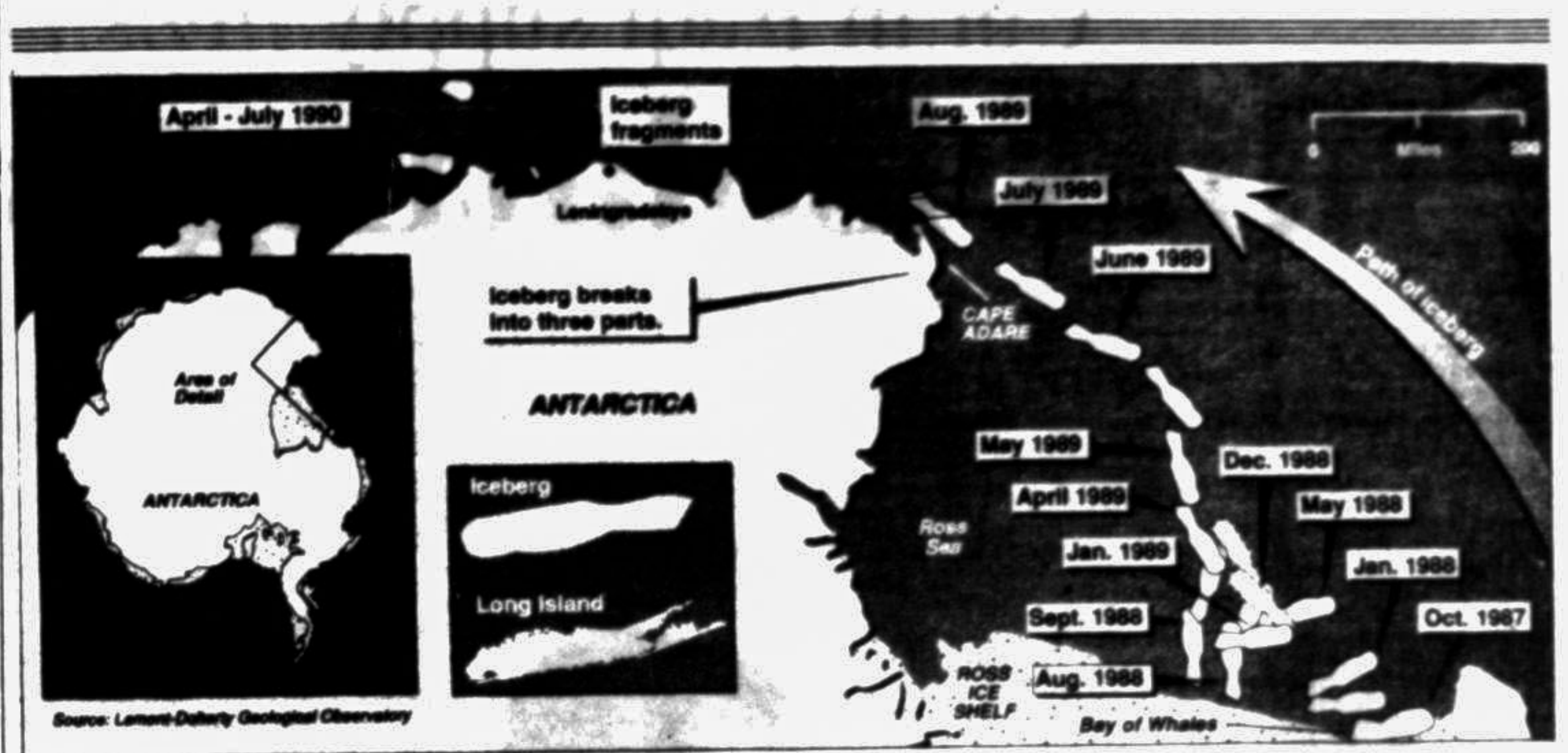
One of the examples of the new techniques which will be used in conjunction with this telescope was demonstrated during the inauguration festivities in the ESO Center in Garching, near Munich. Together with his Italian colleague and the Swiss ambassador, the German Minister for Research, Dr. Heinz Riesenhuber, put the New Technology Telescope (NTT) - on the Chilean Andes peak La Silla, 12,000 kilometers away - into operation by simply

pushing a button. Such use of remote control is also to be made during actual research operation to spare the observers journeys to Chile and to allow a more flexible use of the telescope.

The particularly revolutionary feature of the NTT is the optical system. This deviates from the prior practice of using a mirror, the form of which is as stable as possible. To guarantee such form stability, previous telescope mirrors had to be made fairly massive (and at great expense) - for example, for a diameter of just under 3.60 meters they were between 55 and 60 centimeters thick and weighed around 13 tonnes. In contrast, the NTT mirror support supplied by Schott Glaswerke in Mainz and polished to a high degree of smoothness by Carl Zeiss in Oberkochen is only 24 centimeters thick and weighs only six tonnes. The necessary form stability of this glass-ceramic disc already very flexible by optics standards - is achieved during observation, using 75 continuously movable bearing points in the mirror support. Their operation can be compared with pin-pricks, to which the mirror yields using its own flexibility, and in so doing achieves its optimum form.

Naturally, one of the first objects investigated by the new telescope was the supernova 1987A, which first flared up in the Greater Magellanic Cloud star system, approximately 170,000 light years distant, three years 24th, 1987.

Hermann-Michael Hahn (Grs).



Iceberg's Odyssey Yields Wealth of Climate Data

Antarctic science that the nature and extent of these currents had previously been only surmised.

Scientists from New Zealand's conservation Department, Columbia University's Lamont-Doherty Geological Observatory and the US Joint Ice Center report that satellite observations of the iceberg's progress have established the existence of a complex system of currents along the Antarctic coast. The scientists report in the journal

The iceberg, designated B-9, broke away from the Ross Ice Shelf in the early autumn of 1987, changing the outline of the continent and obliterating one of its salient features, the Bay of Whales. Its size attracted interest as soon as it was spotted in a satellite picture. It was then 96 by 22 miles, and 750 feet deep (155 by 35 kilometers, and about 230 meters deep). Last year it broke into three pieces.

Tracking B-9 became especially accurate after a radio beacon was dropped on it. Its movements over a three-year period demonstrated the existence of four separate currents in the region, the scientists said.

Theebb and flow of Antarctica's ice sheet is of great interest because of its relationship to questions like global warming.

The Antarctic ice sheet, which covers the continent, contains about 90 per cent of the world's ice. Its melting would greatly alter the earth's sea level and climate.

At present, this ice sheet is believed to be more or less in equilibrium; as glaciers, ice tongues and the great ice shelves slowly dump ice into the sea, snow falling over the ice sheet replenishes it at about the same rate. But determining if there is any imbalance in this rate is a complex problem scientists are urgently seeking to solve.

— M. B.

METAL FOAMS ARE NOT JUST A DREAM

Ultra-light metals which float on water are brought into the desired form by a process developed in Bremen and then foamed up by supplying heat.

method, which was developed in Bremen, it is possible to make semishinished metallic materials which, when heated, "rise" like dough.

With this method one can, for example, fill cavities in technical structures with metal foam. Up to now the main problem in producing ultralight metal foams has been that the metal melt, which is stirred to a foamy mass with a gas-emitting leavening agent, has to be cooled as quickly as possible in order to fix the gas bubbles—the pores aren't evenly distributed either.

The method developed at the Fraunhofer-Institut für Angewandte Materialforschung, IFAM, (Fraunhofer Institute for Applied Materials Research) in Bremen circumvents these problems:

Since the scientists use very fine metal powders instead of a metal melt as an educt, the leavening agent can be metered so accurately that the density of the resulting material can be "selected". Densities of between 500 and 1000 kilograms per cubic meter can be reached and thus the buoyancy properties of the materials vary from "floats well" to "suspended in water".

In comparison, even special magnesium-lithium alloys have specific weights of approximately 1500 kilograms per cubic meter.

The main advantage of the Bremen method, however, is that it produces foamed up semishinished material, which can be moulded into any desired shape.

—GRS

Gulf crisis 4,000 Bangladeshi villagers can get medicare with price of a B-52 bomb

from Tom Aston

LONDON: It is the developing world which is paying the true cost of the Gulf war. For the price of five British Tornado jets or six American F15s—around \$210 million—the 20 million Africans currently threatened by famine could be fed for a month.

A rural clinic in Bangladesh could run for a month and afford to treat 4,000 villagers for the price of just one bomb dropped by an American B-52 bomber — \$11,000.

In two days, the operating costs of the British military run to \$16 million, more than the British government's contribution to African famine relief for the whole of 1990.

For the price of 30 of Saddam's Scud missiles — \$6 million — 25,000 Eritrean families could be provided with enough seeds and tools to recover from the current drought in northern Ethiopia.

Throughout Africa, Asia, the Caribbean and Latin America, it is the poor who are being hit hardest by the rise in oil prices since the Gulf crisis began. True, developing countries that are also oil exporters, like Nigerian and Venezuela, stand to profit from the crisis, but others have been nearly crippled. In Uganda, for instance, public transport has either ground to a halt or become so expensive thousands now have to walk miles to get to work or school.

In Bangladesh, the jump in kerosene prices has blacked out villages and slums across the nation at night, for many of the poor can no longer afford fuel for their lamps, a situation exacerbated by hoarding.

Drained of oil and foreign exchange, whole economies in the South have withered while consumers in the North have suffered the minor inconvenience of a rise in petrol prices.

The Western world has lost interest in the plight of the poorer countries. As Paul Spray, Head of Aid at the London-based Christian Aid, says: "The lack of realisation among politicians of the urgency of the problems facing the developing world is alarming. In terms of famine relief in

Africa, all that is needed is the small change of the Northern world.

"They could still carry on fighting the war and easily solve the immediate problem of African famine."

The Western media has little interest in the plight of the

developing world now it has become immersed in the war. As a result, the consciousness of the Western public is also becoming increasingly glued on the Gulf.

Even before the war started the Western media had nailed its colours to the mast of indifference to non-whites as hundreds of thousands of refugees fleeing Kuwait and Iraq were virtually ignored in favour of a few score expatriate Westerners returning home from the Gulf. Third World refugees were often left in the desert without adequate food, water or shelter, or even an offer of help to return home.

For all the talk in Washington of a New World Order, in the eyes of the developing countries, we are fast reverting to the Old Order in which individuals, communities and nations must scramble for all the resources they can get simply to survive, regardless of the long-term implications to the environment, social fabric and the international community.

The United Nations, flag-bearer of the hopes of the least powerful nations that they may one day be treated more justly by the West, has, in effect, been hijacked by Washington to fight a private war that has little to do with the UN and everything to do with US strategic ambitions.

Apart from Yemen and Cuba, few developing nations at the UN dare speak out publicly for they know that if the US wins the war they will pay the price in terms of economic and political retribution. Rarely has the UN looked so powerless and irrelevant in influencing world events.

The war has halted the unravelling of the ideology of fear, insecurity and military posturing that appeared to have begun with the end of the Cold War. The possibility of a peace dividend that could have benefited both North and South has gone. The dividend that could have been used to rebuild the world, is being used to destroy it.

If this is the birth of a New Order then why, for instance, has Washington forsaken

5 Tornado aircraft	\$210m	Enough grain to feed 20m Africans for a month
23 Patriot missiles	\$23m	One year's supply of clothes, seeds, pots and storage facilities for 2m Mozambicans
5 Tomahawk cruise missiles	\$7.2m	SAVE THE CHILDREN Save The Children's 1990-91 budget for Ethiopia
Train one Tornado pilot	\$6m	Enough seeds and tools for 100,000 Eritreans hit by drought
10 Scud missiles	\$2m	15 relief trucks plus spares and shipping costs to Africa

Liberia, for so long a client state, where a famine now rages that could be alleviated for the cost of a dozen or so B-52 bombloads?

If this is the birth of a New World Order then surely we can look forward to the West halting the indiscriminate sale of arms of the kind that created Saddam's military machine, that have destabilised so many parts of the developing world and which divert funds that should rightly be spent on agriculture, industry, health and education.

And perhaps there is just a possibility that the Superpowers can rein-in the chaotic forces they have helped to unleash in Ethiopia, Angola, Sudan and Mozambique, that now make it so hard for Western relief supplies to reach the starving caught up in the midst of the war zones. Perhaps President Bush will refrain from pouring any more fuel on the flames of interethnic African conflict.

Could the madness of this war, flashed around the world on TV in all its fascinating horror, convince the alchemists of war, the scientists, to turn to the alchemy of life and peace?

The awful sophistication of the weaponry of both sides in the Gulf conflict bears adequate testament to the fact that for decades the scientific world's most brilliant minds have been engaged in perfecting the means of mass destruction and governments are engaged in marketing the products of their labours abroad or happy to stand back while other do so. — Gemini News.

Milk powder factory in Iraq bombed?

WASHINGTON, Feb 10: An Iraqi factory located in Baghdad believed to be a biological weapons factory and bombed by the Americans, was actually built to manufacture infant formula and the equipment installed there could not have been used to make "chemical" products, the French contractor who built it told the Washington Post, reports PTI.

New Zealand technicians who visited the factory confirm this and say they saw the factory "actually canning milk powder" as recently as last May.

Three administration officials asked about the New Zealand and French reports, gave inconsistent explanations, the paper said.

The credibility of CNN's reporter in Baghdad Peter Arnett, regarded by the Iraqis as the only objective western correspondent, depends on the outcome to the debate whether it was a milk factory.

So does the credibility of the Pentagon's well as of conservative members of Congress who joined in the attack on Arnett.

After the bombing, the Iraqis took Arnett to the plant and let him film the damage. Arnett told the world through CNN.

The allies had bombed and destroyed an infant formula

factory.

Later that day, US Air Force Lt. Col. Mike Gallagher told reporters in Saudi Arabia "This facility has military guards around it, barbed wire fence. It has a military garrison outside, and numerous sources have indicated the facility is associated with biological warfare production."

The Post indicated the matter is still not fully resolved because a White House official claimed the plant was converted to germ warfare production last fall.

Another official said the plant was originally constructed as a biological warfare facility but it was a back-up plant and was not in operation when it was attacked. An official at a third agency said the plant was not a fully biological warfare facility but produced items which could be useful in the production of biological weapons.

The French and New Zealanders were not at the plant in the fall when the White House claims the plant was conversion.

Patriot being refined

SAUDI ARABIA, Feb 10: The Patriot rocket system which has been shot down in Iraq Scud missiles in mid-air is being refined to make its kills cleaner and safer, reports Reuters.

The Commander of an experimental Patriot unit told reporters on Saturday the system's computer programmes are being modified in the light of battle experience to reduce the amount of debris falling to earth after a mid-air interception.

Army Lieutenant Colonel Thomas Smith said his battalion had been working since the start of the war three weeks ago to rocket and its warhead.

The changes paid off early on Friday morning when a Patriot destroyed a Scud over Riyadh so completely that only small pieces of debris fell to the ground.

Ideally Patriot missiles should intercept Scuds nose to nose with an explosion that disintegrates both missiles.

Fahd meets Cheney : King Fahd of Saudi Arabia met in Riyadh Saturday with US Defence Secretary Dick Cheney and General Colin Powell, chairman of the joint chiefs of staff, who arrived late Friday for talks with Allied military officials, the Saudi News Agency said, reports AFP.

Saudi crown Prince Abdullah Bin Abdel Aziz, Defence Minister Sultan Bin Abdel Aziz and the Foreign Minister, Prince Saud al-Faisal, also attended the meeting, it said.

Iraqi DPM arrives in Amman :

Iraqi Deputy Prime Minister Saadoun Hammadi arrived in the Jordanian capital late Saturday and met immediately with King Hussein, officials in Amman said, reports AFP.

The talks focused on the consequences of the American and Atlantic aggression against Iraq, the official Petra News Agency said.

Mr. Hammadi was earlier in Tehran where he handed Iranian President Ali Akbar Hashemi Rafsanjani a written response from President Saddam Hussein to an Iranian initiative for peace in the Gulf.

The contents of the Iraqi leader's letter were not disclosed. During his three-hour stay in Iran, Mr. Hammadi and Mr. Rafsanjani discussed the latest developments in the war in the region, Iranian television reported.