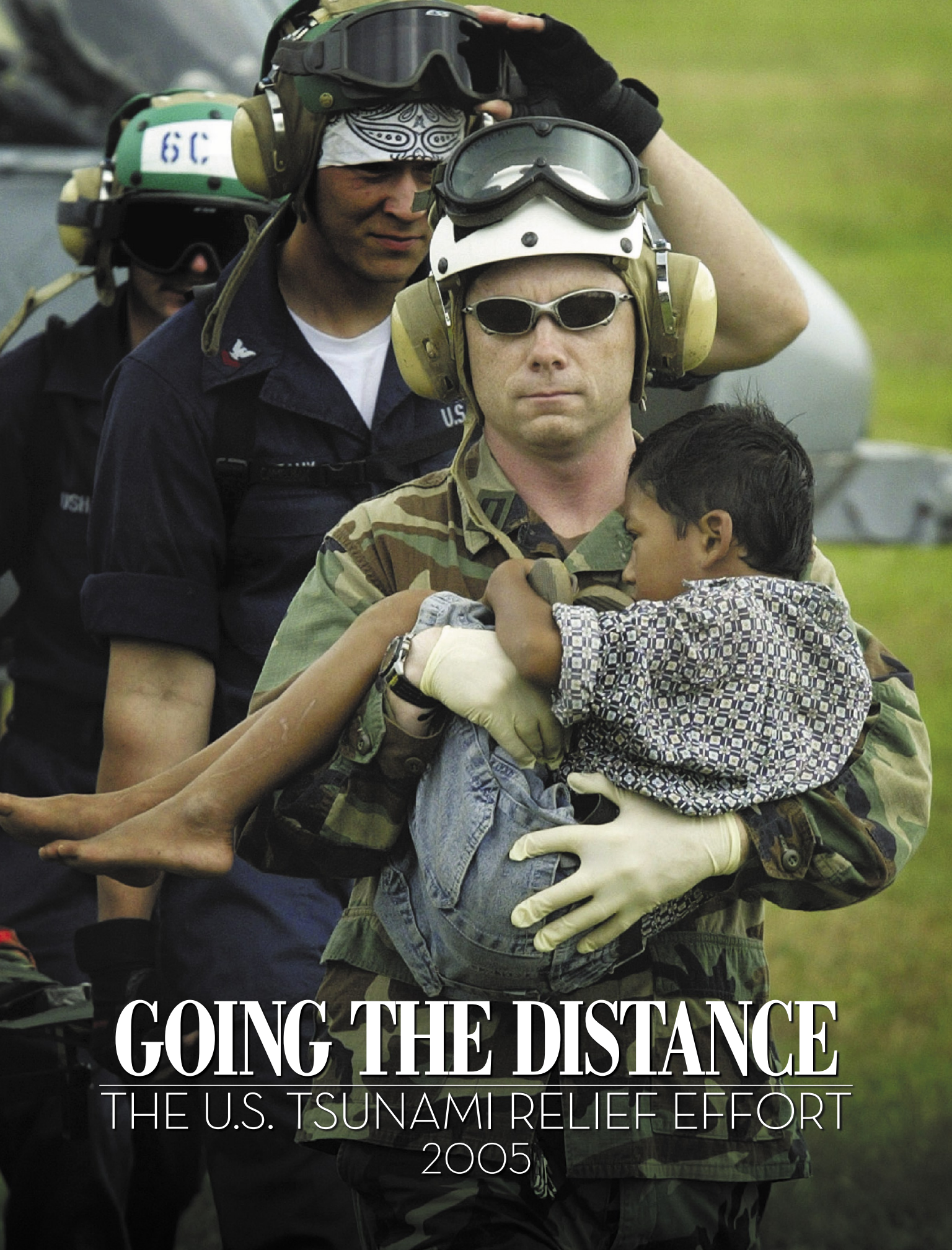


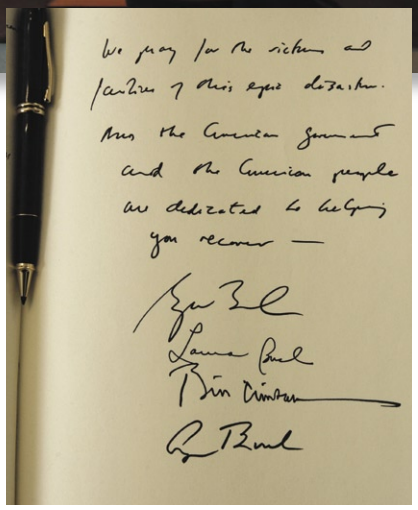
GOING THE DISTANCE

THE U.S. TSUNAMI RELIEF EFFORT

2005

"On the first day of a new year, we join the world in feeling enormous sadness over a great human tragedy. Last Sunday, an earthquake and violent tsunami struck the nations that surround the Indian Ocean. The carnage is of a scale that defies comprehension, with over 100,000 deaths reported. I have signed a proclamation calling for our nation's flag to be flown at half-staff this coming week. As the people of this devastated region struggle to recover, we offer our love and compassion, and our assurance that America will be there to help."

– Radio Address by
President George W. Bush
January 1, 2005



President George W. Bush signs a condolence book for the victims of the tsunami at the Embassy of Thailand, Washington, D.C., Monday, Jan. 3, 2005. Also signing the book are Mrs. Bush, and former presidents Bush and Clinton. Inset: Condolence book, Embassy of Sri Lanka. The president wrote: "We pray for the victims and families of this epic disaster. And the American government and American people are dedicated to helping you recover." *(White House photos)*

Americans Respond to Tragedy

On December 26, 2004, a magnitude 9.0 earthquake off the west coast of Northern Sumatra, Indonesia, triggered a tsunami — a series of giant waves — that inundated coastal areas of Indonesia, Thailand, Sri Lanka, India, and Malaysia, as well as Indian Ocean islands, and parts of East Africa.

Both the American people and the U.S government responded with massive support for the people swept up in the terrible tragedy of the earthquake and tsunami.

"Americans are a compassionate people," said President Bush in his radio address on New Year's Day, "and we are already hard at work helping those nations meet these challenges. The United States has pledged $350 million in relief assistance…. Disaster response officials are on the ground and have established a support center in Thailand that is manned and operational; more than 20 patrol and cargo aircraft have been made available to assess the disaster and deliver relief supplies…. We have dispatched the aircraft carrier, *Abraham Lincoln*, the Maritime pre-positioning squadron from Guam, and an amphibious ship carrying a Marine Expeditionary Unit…to support relief efforts, to include the generation of clean water."

This was the beginning. By January 12, the day following a conference of donors in Geneva, Switzerland, about $88 million — out of the $350 million in relief funds for the region pledged by the U.S. government — had been committed to specific projects in the affected nations. That figure did not include the cost of military relief efforts. As of January 12, more than 15,000 U.S. military personnel were involved in providing relief support in the affected region. Twenty-five ships and 94 aircraft were participating in the effort. The U.S. military had delivered about 2.2 million pounds of relief supplies to affected nations, including 16,000 gallons of water, 113,000 pounds of food, and 140,500 pounds of relief supplies in the previous 24 hours alone. On February 9, President Bush asked Congress to increase the U.S. commitment to a total of $950 million.

In addition to initiating the flow of U.S. funds and materiel as part of a coordinated global relief effort, President Bush dispatched Secretary of State Colin Powell and his brother, Governor Jeb Bush of Florida, in the first days after the disaster to assess the situation.

Speaking in Sri Lanka, January 7, Secretary Powell said: "I will leave the region this afternoon and report to President Bush on all that I have seen in Thailand, in Indonesia, and here in Sri Lanka, as well as the reports I received about what happened in other nations in the region. Twelve countries spread over thousands of miles, all struck by a single event, a single catastrophe, and the international community has mobilized in a way that I have never seen before, to help the affected people…to rebuild their lives."

While the U.S. Department of Defense supplied the logistics component, using its ships, planes, and helicopters to establish a rapid supply chain to stricken regions, the U.S. Agency for International Development (USAID) coordinated much civilian activity. Speaking January 11 in Geneva, USAID Administrator Andrew Natsios estimated the daily cost of U.S. military relief efforts in the region to be more than $5 million a day, in addition to the initial $350 overall U.S. government

An injured Indonesian boy is treated by U.S. and Australian military personnel and relief workers at Banda Aceh airport, Indonesia. *(Andy Eames, AP/WWP)*

Sailors from *USS Abraham Lincoln* and Carrier Air Wing TWO move supplies from a truck in preparation for aerial resupply drop by SH-60 helicopters, Sumatra, Indonesia, Jan. 2, 2005. *(Photographer's Mate 2nd Class Philip A. McDaniel, U.S. Navy)*

commitment. USAID, Natsios emphasized, "is currently undertaking one of the largest relief efforts in its history in order to save lives, mitigate human suffering, and reduce the economic impact of the Indian Ocean disaster."

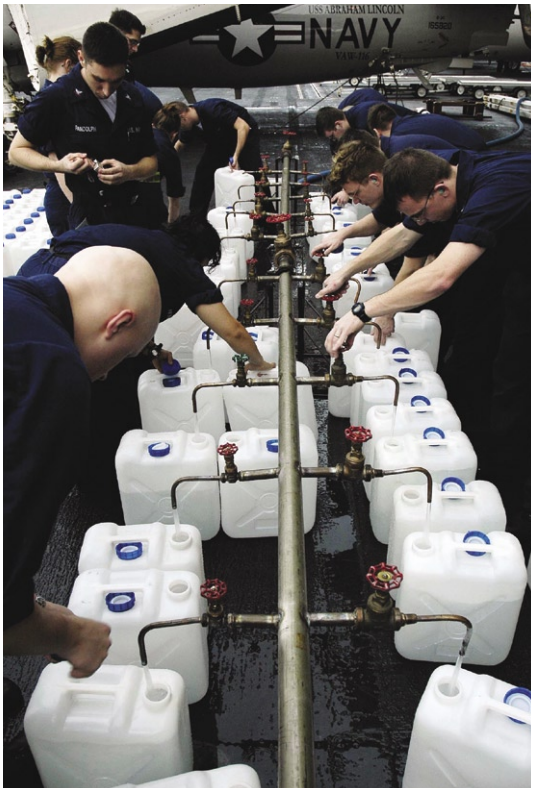
"Of the $350 million we have already committed or spent, USAID has dispersed $78 million…. $35 million of that is [going] to United Nations agencies, and the rest to the Federation of Red Cross and Red Crescent Societies… to non-governmental organizations, to the direct purchases of commodities by our staff, or to air flights."

After the first round of emergency relief efforts, the United States and the world community look forward to a period of long-term reconstruction and rebuilding in the region. The tragedy has heightened the importance of the World Conference on Disaster Reduction — to be held in Kobe, Japan, during the third week of January — and added new urgency to the technical and scientific tasks of building an early warning system for earthquakes and tsunamis in the Indian Ocean similar to the one that exists in the Pacific, where tsunamis are far more frequent.

In the American system, the private sector plays an enormous role in disaster relief efforts. Acknowledging this reality, President Bush on January 3 appointed two former presidents — his father, George H.W. Bush, and Bill Clinton — to head an effort to raise funds directly from the American people, an effort already well underway at that date. Almost from the earliest news reports of the disaster, corporations and many, many individual Americans had offered up relief donations on their own.

"In the coming days," Bush said, "Presidents Clinton and Bush will be speaking about the countless ways individuals and businesses can support this urgent cause. I ask every American to contribute as they are able to do so."

"Americans," the President added, "have suffered sudden catastrophe many times in our own history, from massive earthquakes in Anchorage and San Francisco, to destructive wildfires in the West, to the series of hurricanes that struck Florida last year. From our own experiences, we know that nothing can take away the grief of those affected by tragedy. We also know that Americans have a history of rising to meet great humanitarian challenges and of providing hope to suffering peoples. As men and women across the devastated region begin to rebuild, we offer our sustained compassion and our generosity, and our assurance that America will be there to help." ★



Above: U.S. Navy Petty Officer 2nd Class Timothy Sullivan gets an aerial view of Banda Aceh after a supply drop, Jan. 1, 2005. *(Seaman Patrick M. Bonafede, U.S. Navy)* Right: Sailors aboard the *USS Abraham Lincoln* fill jugs with purified water, Jan. 4, to be flown by helicopters to tsunami-isolated regions in Sumatra. *(Jordon R. Beesley, AP/WWP; US Navy)*

Former U.S. Secretary of State Colin Powell, second from left, speaks with an Indonesian tsunami patient under the care of the Australian Defense Force Aero Medical Evacuation team in Banda Aceh, Jan. 5. *(AP/WWP, Australian Department of Defense)*

Lt. Mark Banks tends to a patient brought in by helicopter to a temporary triage site in Banda Aceh, Jan. 3. *(Photographer's Mate 2nd Class Elizabeth A. Edwards, U.S. Navy)*

Ambassador Lynn Pascoe and USAID Director William Frej lead the way Jan. 1 as volunteers from the U.S. Embassy, Indonesian and American NGOs, the American business community and the Indonesian Armed Forces help load two C-130s at Halim Air Force Base in Jakarta. *(Joule H. Hardjo, U.S. Embassy, Jakarta)*

Above: Indonesians run toward a U.S. helicopter carrying food and relief supplies, Sumatra, Jan. 7. *(U.S. Navy)* Right: Sri Lankan Red Cross members loading aid supplies from the United States on to a truck in Galle, Sri Lanka, Jan. 4. *(Vincent Thian, AP/WWP)* Far right: U.S. Navy flight crewmen carry an injured evacuee, Jan. 3, at the airport in Banda Aceh. *(Bullit Marquez, AP/WWP)*

Top: U.S. Air Force personnel unload a rescue helicopter from a U.S. cargo plane at the airport in Colombo, Sri Lanka, Jan. 5. *(Elizabeth Dalziel, AP/WWP)* Center: At Yokota Air Base, Japan, airmen from the 374th Airlift Wing load relief supplies onto a C-17 Globemaster III, Dec. 31, to be delivered to a forward operating base in Thailand. *(lst Lt. Warren Comer, U.S. Air Force)* Bottom: A U.S. airman carries boxes of relief supplies destined for tsunami-hit areas of southern Thailand Jan. 1 at the international airport in Bangkok. *(Master Sgt. Michael Farris, U.S. Air Force)*

Top left: Dr. Monique Tello, left, a pediatric resident from Yale University, examines a young Sri Lankan girl in a town east of Colombo, Jan. 4. *(Julia Drapkin, AP/WWP)* Top right: A family from Washington, D.C., signs the condolence book at the Indonesian Embassy, Dec. 30. *(Janine Sides, U.S. State Department)* Center: Bill Frist, a Republican senator from Tennessee, and Mary Landrieu, a Democratic senator from Louisiana, talk with tsunami survivors at a refugee camp in Galle, Sri Lanka, Jan. 6. *(Vincent Thian, AP/WWP)* Bottom: Florida Gov. Jeb Bush, President George W. Bush's brother, talks to a television reporter outside a tent hospital at Banda Aceh airport after a helicopter inspection of the tsunami-ravaged area, Jan. 5. *(Bullit Marquez, AP/WWP)*

U.S. Private-Sector Support for Tsunami Relief

Eight-year-old twin brothers, Themio, left, and George Pallis display the sign they used to attract attention to their fund-raising effort for tsunami victims on New Year's Eve at a grocery store near their home in a town in Washington state. They raised over $5,000 for tsunami relief. *(Elaine Thompson, AP/WWP)*

Tjalang, Sumatra — An Indonesian child smiles as he receives a much-needed bottle of water flown in by a U.S. Navy Seahawk helicopter. *(Photographer's Mate Airman Jordon R. Beesley, U.S. Navy)*

U.S. private-sector contributions to tsunami relief already have topped $360 million and are expected to reach nearly $700 million when planned fundraising is complete, according to figures released January 11 by the Center on Philanthropy at Indiana University. American corporations and nongovernmental organizations are contributing cash, supplies, and services to assist in immediate relief efforts as well as in long-term recovery and rehabilitation projects, according to the center.

Corporate donors include companies such as ChevronTexaco Corp., which has sent $490,000 to the Thai Red Cross and local relief agencies; General Mills Inc., which has spent $750,000 on food, water, and shelter for victims; and Levi Strauss & Co., which has contributed $160,000 to local relief agencies.

Foundations established by large corporations also are giving generously, among them the Abbot Laboratories Fund, pledging $4 million in health care products and cash; the GE (General Electric) Foundation, contributing $10 million; and the Bill & Melinda Gates Foundation, created by the Microsoft chief executive and his wife, pledging $3 million.

Throughout the United States, charitable organizations ranging from national nonprofits to local community groups are engaged in fundraising efforts to assist tsunami survivors. In addition, nearly every major U.S. religious denomination seems to be actively supporting the relief effort. The list of donors released by the Center on Philanthropy includes the Adventist Development and Relief Agency, American Jewish Joint Distribution Committee, Baptist World Aid, Catholic Relief Services, Episcopal Relief and Development, Lutheran World Relief, and Presbyterian Disaster Assistance.

The American Red Cross already has contributed nearly $160 million of a planned $400 million expenditure to relief and recovery efforts in the affected area. The Brother's Brother Foundation, based in Pittsburgh, Pennsylvania, has sent over $8 million worth of medicines and supplies to tsunami survivors, while CitiHope International, a Christian relief and development agency based in Andes, New York, has contributed $10 million to the aid effort.

The U.S. chapter of Doctors Without Borders has raised $20 million for tsunami relief — an amount sufficient "for our currently foreseen emergency response in South Asia," according to the organization. Overall, the international nonprofit group says it has sent more than 160 international aid workers and 400 tons of relief materials to provide assistance to people affected by the crisis in South Asia.

Another volunteer organization, Habitat for Humanity, is currently working to rebuild housing in six of the 12 affected countries. The organization, based in the U.S. state of Georgia, is strongly supported by former President Jimmy Carter, who frequently participates in its home-construction projects.

In the initial days after the disaster, many other American corporations had responded.

At a January 6 forum in Washington, the Global Business Dialogue (GBD) noted the following contributions, among others:

Proctor and Gamble is providing $1 million worth of its PUR water purification sachets as well as $500,000 in cash to partner organizations to deliver over

150 million liters of purified water to areas in the greatest need.

New Jersey-based Johnson & Johnson has made an initial cash contribution of $2 million to relief efforts and is distributing medical supplies throughout the region.

The world's largest package delivery company, UPS, based in Atlanta, has announced it will ship free up to 1 million pounds of emergency relief supplies from Europe, Asia, and the Americas via air, ship, and ground to Asia.

In addition:

Top corporate donors and their foundations include pharmaceutical company Pfizer Inc., which is donating $10 million in cash to local and international relief organizations and $25 million in medicines. The Coca-Cola Company is contributing $10 million, Exxon Mobil Corporation and its employees are giving $5 million, and Citigroup Inc., is sending $3 million.

The Dow Chemical Co. of Michigan said it will contribute $5 million in aid funding, matches of employee contributions for relief, and products and funds for longer-term reconstruction efforts.

As of January 3, online retailer Amazon.com had collected nearly $13 million for the American Red Cross disaster relief fund from almost 160,000 contributors using Amazon.com's one-click payment system.

The Wal-Mart chain of variety stores is setting up collection containers in its stores and has pledged $2 million from its foundation, according to news reports.

Internet service providers Google Inc., America Online and Yahoo are all linking visitors to their sites to relief groups ranging from the Red Cross and its sister organizations, to CARE, AmeriCares, Oxfam, World Vision, and the United Nations Children's Fund (UNICEF).

The list of private contributors, as noted, includes drug and health-care companies: Merck and Company, Inc. is donating $3 million. All also are sending supplies to the affected region, which spans from Indonesia to Somalia.

Bristol-Myers Squibb is donating $1 million in funds and enough antibiotics and antifungal drugs to treat 75,000 people.

Drug companies with operations in the area have employees distributing antibiotics, nutritional supplements, infant formula, and baby food and other supplies, news reports say.

News sources cite further corporate donors, including Nike, American Express, and First Data, each giving $1 million.

PepsiCo rushed out bottled water from one of its plants in India and plans to contribute an additional $1 million to the relief effort.

Cisco Systems Inc., the Cisco Foundation, and Cisco employees are donating $2.5 million.

Pledged aid funds include $3 million from a philanthropic foundation headed by Michael Dell, the founder of Dell Computer.

U.S.-based health-care provider Kaiser Permanente has offered to send physicians to help the relief effort, and some oil companies reportedly are supplying free fuel for rescue operations.

Federal Express is shipping medical supplies to the region on behalf of several aid groups. Northwest Airlines is teaming with AmeriCares to transport relief supplies.

MoneyGram has offered to discount its fees for sending money transfers to the region.

Stucc On Steel, based in Virginia, said it is donating $2.5 million for building 5,000 low-cost, high-strength houses for homeless families. The company's new foundation, created to help tsunami reconstruction, also will provide training and other support to builders in the area.

Texas-based Kimberly-Clark Corp. said it will contribute $1.5 million in a combination of direct support and in dollar-for-dollar matching of employee contributions.

New Jersey-based Prudential Foundation, the grant-making organization of Prudential Financial Inc., said it will donate $1 million and open a disas-

Federal Express (FedEx) workers load supplies for tsunami victims on to a plane at Kennedy Airport in New York, Jan. 7, bound for southeast Asia. *(Gregory Bull, AP/WWP)*

A Northwest airlines employee in Michigan looks over part of a 29,000-pound relief shipment for tsunami victims, Jan. 4. The airline offered to carry up to 200 tons of supplies. *(Carlos Osorio, AP/WWP)*

The Petticoat Tearoom in Baltimore, Maryland, one of 19 restaurants and bars in the neighborhood that agreed to contribute some of their income to the Catholic Relief Services for tsunami relief. *(Chris Gardner, AP/WWP)*

ter-relief fund for employees, waiving an annual limit for its matching gifts program.

The Carnegie Corp. of New York and the New York Stock Exchange each have pledged $1 million to tsunami relief.

Companies are targeting the major groups working in the area to receive their help, including the U.N. Children's Fund (UNICEF) and the Red Cross, as well as local groups, such as the National Relief Fund of India and The King of Thailand Foundation, according to news reports.

Celebrities are also contributing to the relief effort, including film stars Sandra Bullock, giving $1 million, and Leonardo DiCaprio, who has pledged a "sizeable" amount, according to news reports. In 2000, DiCaprio filmed a movie on an island in Thailand that has been devastated by the disaster.

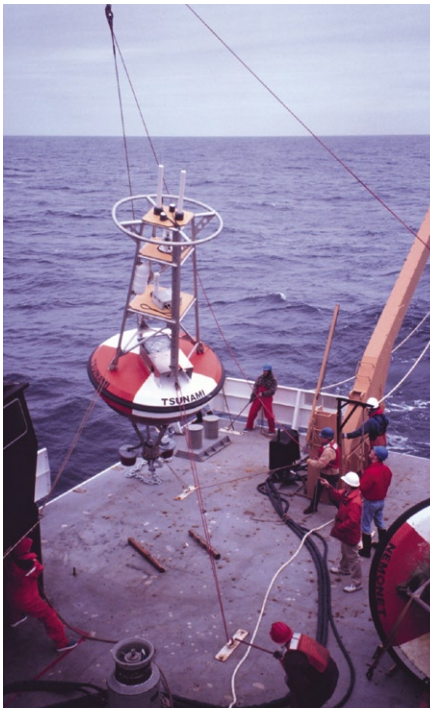
Other performers will appear in and contribute to tsunami-related fund-raising concerts and television specials, including a January 15 telethon broadcast by NBC television.

At the Global Business Dialogue forum, Vikram Misri of the Embassy of India said his nation has "been touched and gratified by the love, the warmth, and the affection and the generosity that has been shown by the American people — ordinary citizens, the government … who have brought to this disaster a very human face." ★

Left: Singer Willie Nelson performs at the "Tsunami Relief Austin to South Asia" concert in Austin, Texas, Jan. 9. *(Kelly West, AP/WWP)* Top: A Red Cross worker, right, holds a bucket accepting donations to the disaster relief fund for tsunami victims outside a football stadium in Baltimore, Maryland, Jan. 2. *(Chris Gardner, AP/WWP)* Above: Ken Hacket, center, president of Catholic Relief Services, supervises donations coming to the CRS web site, Dec. 31. *(Chris Gardner, AP/WWP)*

Only Largest Earthquakes Generate Tsunami Waves

Massive waves wash through houses in a village south of Colombo, Sri Lanka, Dec. 26, 2004. A tsunami triggered by a magnitude 9.0 earthquake centered off northern Sumatra destroyed life and property in many nations. *(AP/WWP)*



Oceanographic tsunami warning buoy being deployed from the stern of the National Oceanic and Atmospheric Administration (NOAA) vessel *Ronald H. Brown*. *(Commander Emily B. Christman, NOAA)*

The series of monster waves, or tsunami, that destroyed life and property December 26 in countries bordering the Indian Ocean, resulted from a magnitude 9.0 earthquake centered off the west coast of northern Sumatra, according to the U.S. Geological Survey.

A tsunami is a series of large waves usually generated by a sudden, violent undersea disturbance near a seacoast or in the ocean. Earthquakes, landslides, volcanic eruptions, nuclear explosions, and even the impacts of meteorites, asteroids, and comets can generate a tsunami.

Tsunami is a Japanese word that means "harbor wave."

According to geologists, earthquakes and other violent upheavals of the earth are possible because the earth is made up of different layers. From the inside to the outside, the layers are a solid inner core, a liquid outer core, and a solid mantle. The solid mantle contains a soft, semi-molten layer called the asthenosphere, the solid lithosphere, and the crust.

The lithosphere is made up of massive plates, like pieces of a jigsaw puzzle, that float on the soft asthenosphere and support the earth's continents and oceans. This theory, called plate tectonics, says that hot currents of molten rock under the plates move them constantly in different directions.

Sometimes the plates are close together and pull apart (spreading boundary) or grind past each other (transform boundary), or one plate slides under another (subduction zone).

The most destructive tsunamis are generated by large, shallow earthquakes with an epicenter or fault line near or on the ocean floor. These usually occur in regions of the world characterized by tectonic subduction along tectonic plate boundaries.

When the plates move past each other under the ocean, they generate large earthquakes that tilt, offset, or displace large areas of the ocean floor, from a few kilometers to 1,000 kilometers or more. This disturbs the ocean's surface, displaces water, and generates a series of tsunami waves.

Once a tsunami is generated, its energy is distributed throughout the water column above the earthquake, regardless of the ocean's depth.

Tsunami waves may go unnoticed by ships on the open ocean, but as they approach land and the water shallows, they can grow to great heights and rush far inland. Tsunami waves can travel across the ocean at speeds up to 800 kilometers an hour — about as fast as a jet airliner travels.

A tsunami is made up of a series of very long waves. The waves travel outward on the surface of the ocean in all directions away from the source area, like ripples caused when a rock is thrown into a pond.

The period of the tsunami waves (the time it takes for two successive wave crests to pass a given point) can range from five minutes to 90 minutes. A tsunami's wave crests can be a thousand kilometers long, and from a few to a hundred kilometers or more apart as they travel across the ocean.

On the open ocean, the wavelength of a tsunami may be as much as 200 kilometers, many times greater than the ocean depth, which is on the order of a few kilometers.

Tsunami waves in the deep ocean can travel at high speeds for long periods of time for distances of thousands of kilometers and lose very little energy in the process. The deeper the

water, the greater the speed of tsunami waves will be.

Tsunamis arrive at a coastline as a series of successive crests (high water levels) and troughs (low water levels), usually occurring 10 to 45 minutes apart. As they enter the shallow waters of coastlines, bays, or harbors, their speed decreases to 50-60 kilometers per hour.

For example, in 15 meters of water, a tsunami's speed will be only 45 kilometers per hour. But 100 or more kilometers away, another tsunami wave travels in deep water toward the same shore at a much greater speed, and still behind it there is another wave, traveling at even greater speed.

As tsunami waves become compressed near the coast, the wavelength is shortened and the wave energy is directed upward, increasing their heights considerably. Just as with ordinary surf, the energy of the tsunami waves must be contained in a smaller volume of water, so the waves grow in height.

Even if a tsunami wave was one meter or less in the deep ocean, it may grow into a huge 30-35 meter wave when it sweeps over the shore. If the tsunami waves arrive at high tide, or if there are concurrent storm waves in the area, the effects will be cumulative and the inundation and destruction will be even greater.

Not all earthquakes generate tsunamis. It usually takes an earthquake with a magnitude of more than 7.5 to produce a destructive tsunami.

The devastating December 26 earthquake was centered in the town of Padangsidempuan in North Sumatra Province, about 1,300 kilometers northwest of Indonesia's capital, Jakarta, and had an estimated magnitude of 9.0.

Tsunamis can be generated in any world ocean, inland sea, or large body of water, but most occur in and near the Pacific Ocean. This happens because the Pacific covers more than a third of earth's surface and is surrounded by a series of mountain chains, deep-ocean trenches, and island arcs called the "ring of fire," where most earthquakes occur (off the coasts of Kamchatka, Japan, the Kuril Islands, Alaska, and South America). Many tsunamis are also generated in seas that border the Pacific Ocean.

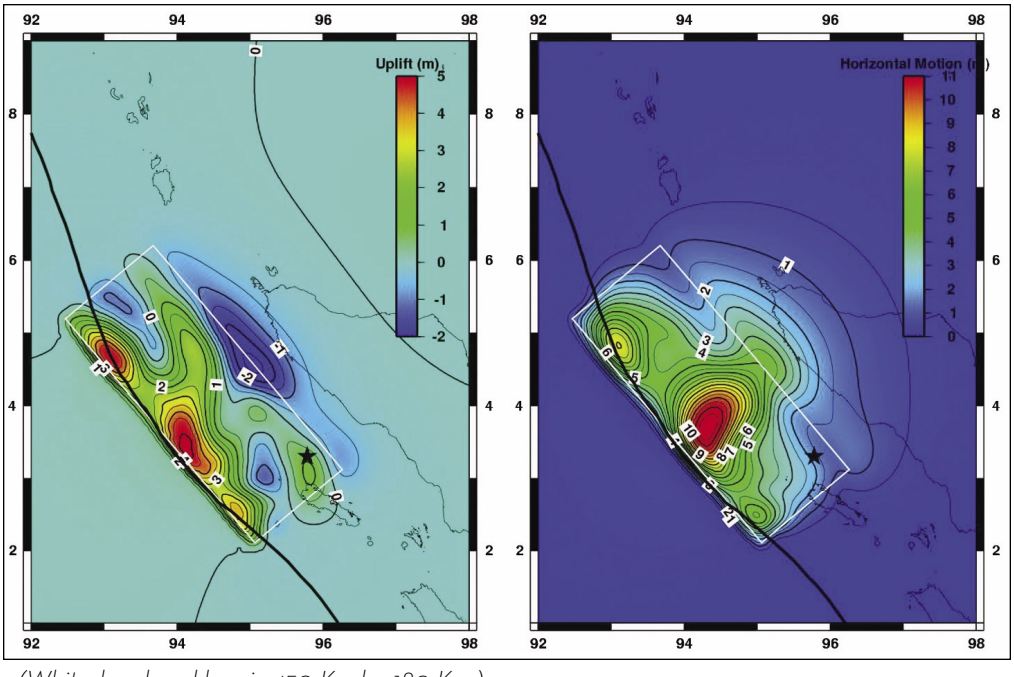
One of the largest and most destructive tsunamis ever recorded was generated in 1883 after the explosion and collapse of the volcano of Krakatau in Indonesia. The explosion generated waves that reached 41 meters and destroyed coastal towns and villages along the Sunda Strait in the islands of Java and Sumatra, killing 36,417 people.

Some geologists believe the explosion or collapse of the volcano of Santorini in the Aegean Sea destroyed the Minoan civilization in Crete in 1490 B.C.

In the last decade, destructive tsunamis have occurred in Nicaragua (1992), Indonesia (1992, 1994, 1996), Japan (1993), Philippines (1994), Mexico (1995), Peru (1996, 2001), Papua-New Guinea (1998), Turkey (1999), and Vanuatu (1999).

Experts say technical elements of a regional early warning system could cost about $20 million and with international cooperation could be put in place in less than a year.

In a statement issued by the United Nations, Salvano Briceño, director of the secretariat for the United Nations International Strategy for Disaster Reduction, notes that "We are not starting



(White-bordered box is 450 Km by 180 Km.)

These two charts show estimates of how much the earth's surface moved as a result of the earthquake. On the left is vertical displacement, or uplift. Positive values (red, yellow, and green) show areas that rose during the earthquake and negative values (blue) show regions that dropped. The maximum rise, along the subduction zone where the Burma (tectonic) Plate is moving over the India Plate, was over 5 meters (16 feet). The greatest horizontal motion of the sea floor (right) was 11 meters (36 feet). *(Image courtesy Chen Ji, California Institute of Technology)*

from scratch. Risk maps are already available and many countries in the Indian Ocean have early warning systems for other types of natural hazards, such as floods and cyclones. Existing international warning organizations already detect earthquakes and connect relevant authorities with each other."

Mark Lagon, U.S. deputy assistant secretary of state for international organization affairs, adds, "President Bush has said that we are going to develop and share plans for expanding existing technical capability for early warning about tsunamis. Such a system would cover not just the Pacific, not just the Indian Ocean, but would offer a broad early warning capability."

General and educational material on tsunamis is available at http://www.tsunami.org/

National Weather Service International Tsunami Information Center is available at http://www.prh.noaa.gov/itic/library/about_tsu/faqs.html

Information about tsunamis and earthquakes from the U.S. Geological Survey (USGS) is available at http://walrus.wr.usgs.gov/tsunami/

USGS tsunami and earthquake links are available at http://walrus.wr.usgs.gov/tsunami/links.html

The Great Waves, a brochure about tsunamis from the National Oceanic and Atmospheric Administration, is available at http://www.prh.noaa.gov/pr/hq/itic/library/pubs/great_waves/tsunami_great_waves_1.html ★

Top: The Pacific Tsunami Warning Center in Ewa Beach, Hawaii, where the U.S. National Weather Service monitors tracking systems watching for tsunami activity in the Pacific Ocean, Dec. 30. *(Ronen Zilberman, AP/WWP)* Left: These images, acquired by Space Imaging's *Ikonos* satellite, show the town of Lhoknga, Banda Aceh, before and after the tsunami. Almost all the trees, vegetation, and buildings in the area were washed away. *(NASA)*

USEFUL WEB SITES

U.S. Government Links

U.S. Department of State: Tsunami Relief
http://www.state.gov/p/sa/tsunami

Asian Tsunami Crisis Information
http://travel.state.gov/travel/cis_pa_tw/tsunami/tsunami_2016.html

Latest News from VOA
http://enews.voanews.com/dm?id=076C3DD06256D9342A7D6481976C6976

The White House: U.S. Support for Earthquake and Tsunami Victims
http://www.whitehouse.gov/infocus/tsunami/

U.S. Agency for International Development (USAID): Earthquake and Tsunami Relief
http://www.usaid.gov/locations/asia_near_east/tsunami/

Map of USAID Tsunami Relief Activities (PDF)
http://www.usaid.gov/locations/asia_near_east/tsunami/Indian_Ocean_earthquake_010205.pdf

USAID Fact Sheet on Indian Ocean Earthquake and Tsunamis (PDF)
http://www.usaid.gov/locations/asia_near_east/tsunami/Indian_Ocean_EQ_and_TS_FS07-1.2.05.pdf

U.S. Geological Survey
http://earthquake.usgs.gov/eqinthenews/2004/usslav/

U.S. Forces Aid Tsunami Relief Efforts in Southeast Asia
http://www.defenselink.mil/home/features/tsunami

U.S. Pacific Command - Tsunami Relief: Special Coverage
http://www.pacom.mil/special/0412asia/index.shtml

FirstGov.gov: Asia Earthquakes and Tsunamis
http://www.firstgov.gov/Citizen/Topics/Asia_Tsunamis.shtml

Relief Agencies

Center for Disease Control: Tsunamis
http://www.bt.cdc.gov/disasters/tsunamis/

USA Freedom Corps: Tsunami/ Earthquake Relief
http://www.usafreedomcorps.gov/index.asp

USAID: U.S. Relief Organizations
http://www.usaid.gov/locations/asia_near_east/tsunami/ngolist.html

Center for International Disaster Information: South Asia Earthquake and Tsunami
http://www.cidi.org/incident/tsunami/

A list of charities verified by the Reuters Foundation
http://www.alertnet.org/member_directory.htm

The American Red Cross Disaster Information: Listing of Relief Agencies
http://www.disasterrelief.org/GiveHelp/

CNN.com: Aid groups accepting donations for victims
http://www.cnn.com/2004/WORLD/asiapcf/12/27/quake.aidsites/index.html

U.S. Embassies

U.S. Embassy Sri Lanka
http://colombo.usembassy.gov/

U.S. Embassy New Delhi, India
http://newdelhi.usembassy.gov/

U.S. Embassy Bangladesh
http://dhaka.usembassy.gov/

U.S. Embassy Jakarta, Indonesia
http://www.usembassyjakarta.org/

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Jan. 6: Ecstatic children in Meulaboh, Sumatra, Indonesia, thank Aviation Antisubmarine Warfare Operator Second Class Donald Shannon for bringing them food and water that had been desperately needed in the wake of the tsunami. *(Photographer's Mate Airman Jordon R. Beesley, U.S. Navy)*

Front Cover: Banda Aceh, Indonesia, Lieutenant Shawn Harris of the *USS Shoup* carries an Indonesian boy to medical facilities at Banda Aceh airport, Jan. 6. *(AP/WWP)*

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