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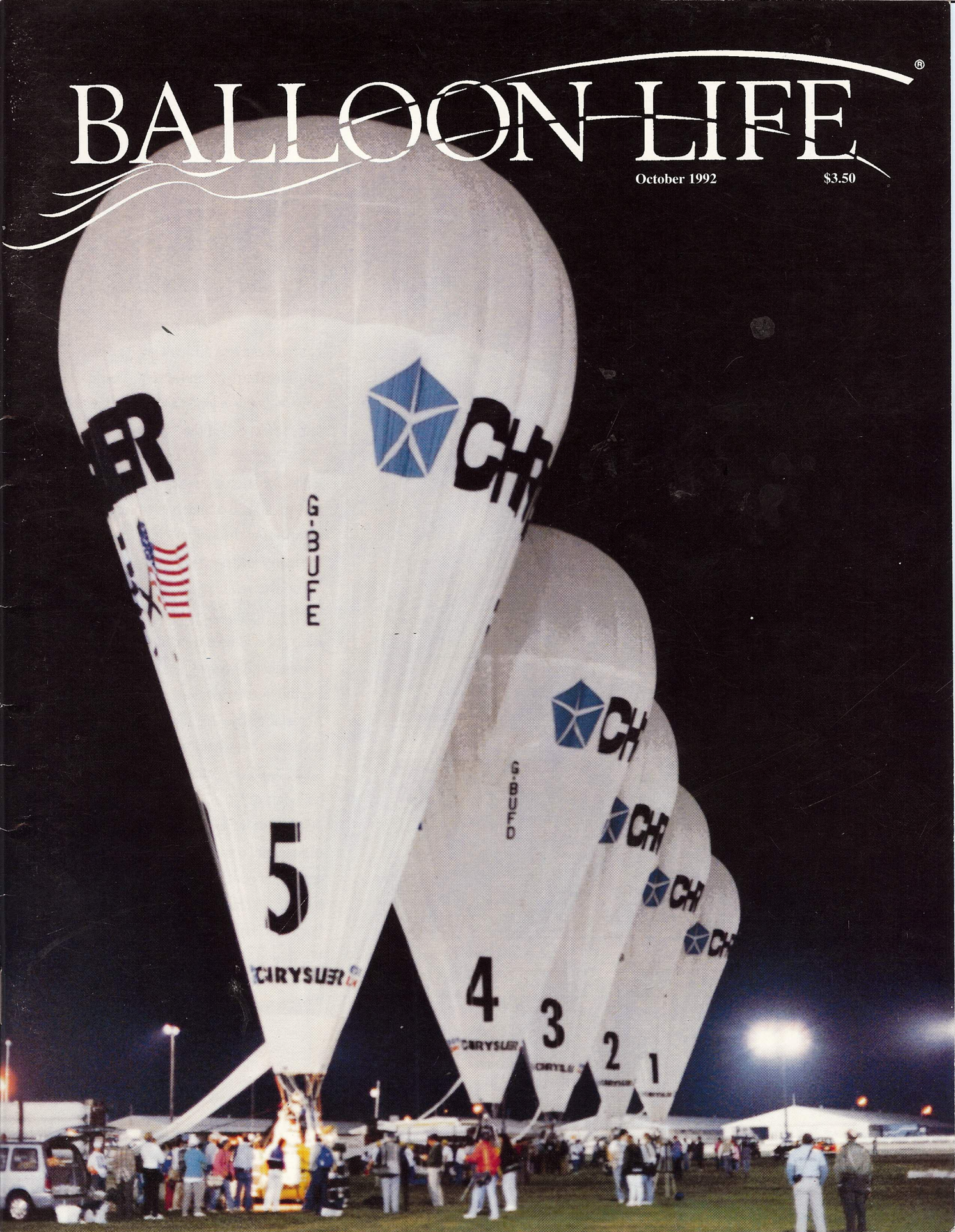


The Transatlantic Challenge is Met!

Belgians are First Across, Americans Set Duration Record

story and photos by Maureen Lynch

"IT'S BEEN ONE happy crisis after another." That's how meteorologist Bob Rice of Weather Services corporation summed up the first Chrysler Transatlantic Challenge Balloon Race, that ended September 22, 1992 with three of five balloon teams successfully crossing the ocean.

Between high and lows, developing depressions in mid-ocean while the flights were in progress and an encroaching hurricane tossed in for good measure, there wasn't a dull moment from start to finish.

The race that began in the pre-dawn hours of Wednesday, September 16th, ended with the landing of Team 5—USA (Richard Abruzzo and Troy Bradley) 30 kilometers southeast of Benslimane, Morocco (about 34 miles from Casablanca) almost 145 hours after the launch. (The exact duration will be determined by the FAI). Race Director Alan Noble described it as a text book landing, with light wind and few clouds. The flight duration, subject to FAI verification, breaks the standing absolute world record for duration in a balloon of 137 hours, 5 minutes and 50 seconds held by Richard Abruzzo's father, Ben Abruzzo along with Larry Newman and Maxie Anderson from the first transatlantic balloon flight which ended August 17, 1978.

Belgian team of Wim Verstraeten and Bertrand Piccard prepare for liftoff from Bangor, Maine.

The Belgian team of Wim Verstraeten and Bertrand Piccard were already celebrating victory for having been the first to cross a paved road in Europe—passing over the coast of Portugal at 01:30 Zulu (GMT) September 22nd doing about 28 knots at 13,000 feet. Their official flight time was 114.5 hours.

"We really feel very thrilled. We are very happy with the performance of the Cameron Rozier 77 balloon. We are very happy and we thank everybody who made this happen," the pair said from their balloon.

The second team to make landfall was the British team of Don Cameron and Rob Bayly. They made a successful landing on a "long, sandy beach, 4 kilometers north of Figueira da Foz, near Mont Real, Portugal."

The race had commenced slowly enough—for the first 24 hours the balloons all hovered low, "to preserve track" was how one meteorologist put it. Winds at altitude were taking a southerly hook, so to avoid being carried into the middle of the ocean, the teams stayed low over the water—some even valving helium to avoid climbing from superheating. The USA balloon spent most of the first night at about 300 feet. The price for a desirable tracking direction, of course, was speed. The race proceeded at a leisurely 13-15 knots. By the next day, Thursday, progress improved and some pilots took advantage of the chance to catch up on some sleep when

things weren't too busy. The USA team radioed they were sunbathing. The Belgian team, however, had a scare that very same day.

"When the balloon hit the ceiling yesterday, the appendix, which was frozen to the envelope, came lose and was making terrible noises as if everything had ripped open," explained Verstraeten. "Bertrand and I were as white as the clouds beneath us. (Fortunately there was no problem.) The most beautiful moment was the morning after our takeoff in Bangor, we were flying at 200 feet above the Bay of Fundy when we first heard, and then saw a few finback whales.

"We passed our first night in the gondola without any problem; the night view over the ocean with the moon and the beautiful white balloon made an impressive view," said Verstraeten.

There had been another surprise for all five balloons. Don Cameron radioed to headquarters in Rotterdam that, "we just heard a double bang which made even the floor of the gondola jump. The first reaction was fright, but all the balloons felt the same—probably the Concorde." None of the teams reported finding any damage to the balloon systems.

It was understood from the very beginning that the various teams might elect to keep their strategies—and thus flight information such as position, track and altitude—to themselves while the race was in progress. But, once in the air, the teams maintained regular radio contact with each other. Information and tips were passed back and forth, as well as discussion of weather conditions they were experiencing. As one pilot following the race pointed out, "If you have a problem or want to kick around an idea, if you talk to Rotterdam (the control center), everyone's going to know about it. But if you talk amongst yourselves, besides the moral support, the other teams are the only ones who know what it's like—they're in the same boat. And, they may be asking for your two cents worth the next day."

"This cooperation was very good,"

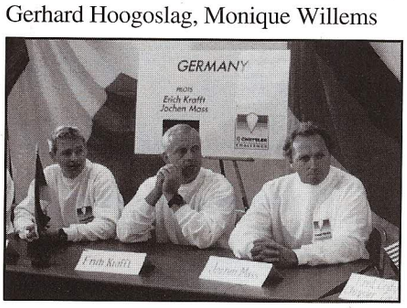
Continued on page 20

Belgium Team: Yves d'Oultremont, Wim Verstrasten, Bertrand Piccard

United States Team: Richard Abruzzo, Troy Bradley, David Melton

Great Britain Team: Ron Bayly, Don Cameron, Jim Howard

The Netherlands Team: Evert Louwman, Gerhard Hoogoslag, Monique Willems



German Team: Uwe Schneider, Erich Krafft, Jochen Mass

The Chrysler Challenge -

An Historic Perspective on the Race to Cross the Atlantic by Balloon

by Maureen Lynch and Glen Moyer

To fly across the Atlantic. It has been the province of larger than life adventurers, risking and at times forfeiting life and limb over the years. With the successful completion of the first Transatlantic race, many will now say such a venture has become a sport—accessible only to those most advanced and qualified pilots, with the "right stuff" for the journey, but an accessible sport nonetheless.

There were 13 unsuccessful attempts and five aeronauts died in pursuit of the balloonists' Holy Grail—to be the first to conquer that most unfriendly, yet tantalizing obstacle, linking the New World and the Old. The feat is steeped not only in practicality, but in emotional and symbolic importance as well—to bridge the two continents, to return to the birthplace of ballooning in a craft launched from ballooning's greatest haven today (the US.), and to duplicate the exhilaration known round the world when Lucky Lindy touched his wheels down at Le Bourget so long ago. And this Grail was an unconquered quest at a time when the world today needed heroes.

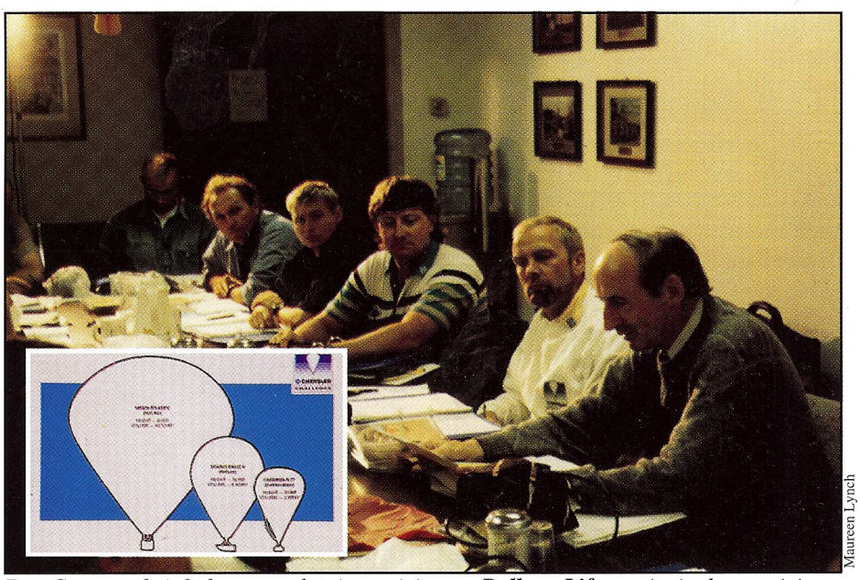
With the success of Double Eagle II in 1978, the race was won—but there were still laurels to collect. In a feat of superhuman endurance and drive, Joe Kittinger piloted the same flight to Europe; alone. Henk Brink, his wife Evelin and Willem Hageman claimed the first crossing by Europeans and the first, and only crossing, by a woman. Then came what many regarded as an impossibility—to reach the European finish line in a hot air balloon (though via a most unconventional compilation of new technologies) a feat accomplished by Per Lindstrand and Richard Branson. Finally, just last February, Spanish aeronauts Thomas Feliu and Jesus Gonzales Green recorded the first East to West crossing.

Now three of five teams in the Chrysler Challenge have jumped the pond and LTA technology has seemingly advanced to the point where a prepackaged system, custom-designed for the trip, can now be provided to almost any ballooning team wishing to pit their mettle against the aquatic juggernaut. One must be the right type of balloonist—certainly not all of us are suited for this style of flying and risk taking. But the greatest danger, going down at sea, has been greatly mitigated by survival gear, emergency communications and satellite rescue equipment, ensuring accelerated response to a possible sea rescue, and greater protection to await retrieval in the event of a ditching at sea. With this greatly enhanced safety net, far more balloonists will no doubt want to experience the thrill that only sixteen men and one woman have ever known.

But is it sport? Has crossing the Atlantic by balloon become little more than a Saturday morning passenger ride? Richard Abruzzo doesn't think so. Fresh from breaking his father's absolute world duration record for balloons, he told *Balloon Life,* "I don't think it's any easier. The Atlantic is still just as big and mean."

If, in the light of the success of the Chrysler Challenge, you begin to think that crossing the Atlantic is easy, remember that prior to this race, more men had walked on the moon than had flown a balloon successfully across the Atlantic.

Like the great sailing competition, the America's Cup, that began ages ago as a test between men of different nations and has evolved into a contest that pits one team's riches and technology against the other, the Chrysler Transatlantic Challenge has unquestionably ushered in a new era of competitive ballooning. And, where there is a challenge to be met, there are men and women who will stand to meet it. Already, plans for the second transatlantic challenge are being drawn.



Maureen Lynch

Don Cameron briefs the transatlantic participants. ***Balloon Life*** *was invited to participate in various training sessions. Inset: sizes of Virgin Atlantic, Double Eagle II, Cameron R.77.*

Technology Helped Defeat the Odds

by Maureen Lunch

The inspiration for the Chrysler Transatlantic Challenge came from Don Cameron and his staunch belief in the helium/hot air hybrid Rozier technology. It was a technology he used in his own attempt to be the first to cross the Atlantic by balloon in 1978 aboard *Zanussi*. It is a technology he has continued to develop and refine; his efforts culminating in his own successful flight from England to Russia and with the first ever west to east crossing of the Atlantic by Spanish aeronauts last February. While the concept remained the same, the technology built into the hybrid balloons designed for the Chrysler Challenge was vastly different from that of *Zanussi*. Whereas *Zanussi* was a gas cell completely enclosed within a larger hot air envelope, the Chrysler balloons are more streamlined—a gas cylinder of 77,000 cubic foot volume with a fabric "cone" attached at the equator of the gas cell, just above the "Chrysler" logo, running down to the burners in what could be termed a glorified skirt. The spherical gas cell is manufactured from two weights of nylon fabric; the heavier and stronger fabric forming the upper half of the sphere which is exposed to the atmosphere, the lighter base fabric being protected inside the fabric "cone." During daylight hours the sun warms the helium from the top of the sphere. (White fabric was chosen to limit the effects of solar heating as the flight plan proposed to limit the balloons maximum altitude at 23,500 feet.) At night, propane burners heat the air inside the fabric cone, in turn warming the helium from the underside of the gas cell, thus counteracting the gas' natural tendency to condense and lose lift. A release mechanism allows much of the cone to be torn away and the gas cell transformed into a parachute mode in the event of an emergency.

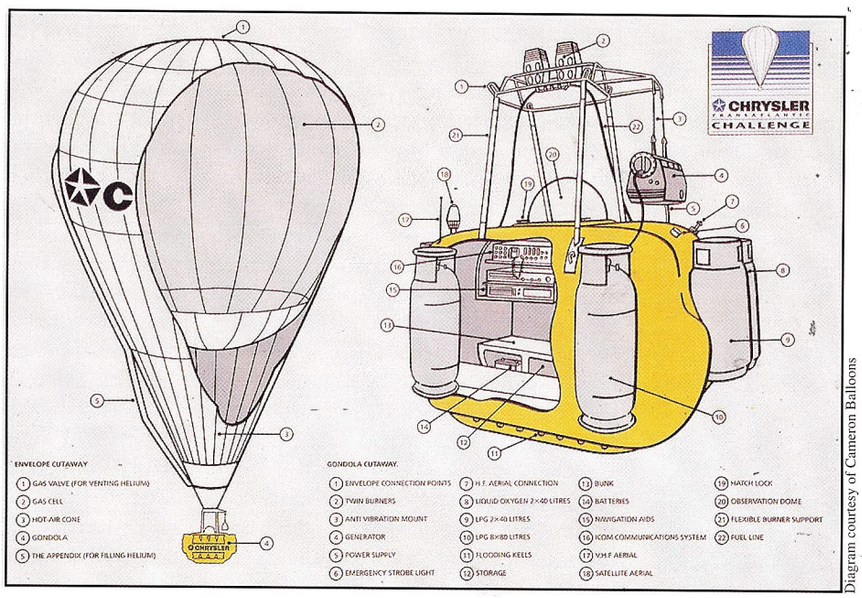
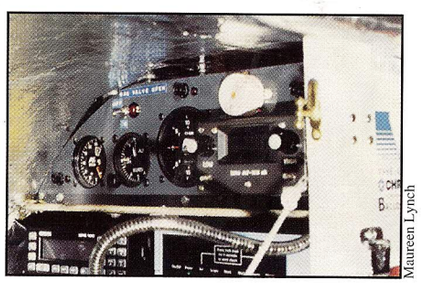


Diagram courtesy of Cameron Balloons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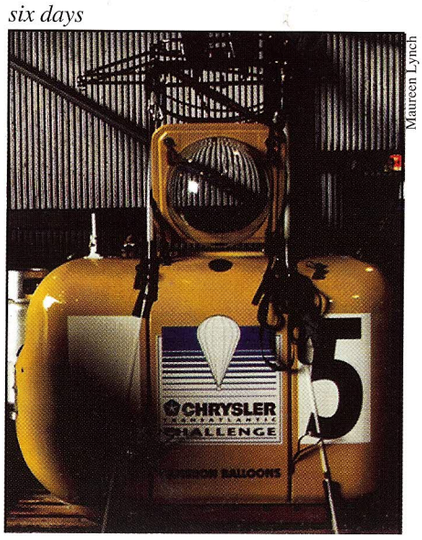
Top: *Cutaways of Envelope & Gondola*
Above: *Instrument panel*
Below: *Gondola, home to Team USA for six days*



Maureen Lynch

The capsules were designed for performance, not comfort. Built of Kevlar and composite materials, each weighs only 100 pounds when empty. The interior is 1.4 by 2.2 meters with a height of only 1.4 meters. One cannot even sit up straight inside, unless parked directly under the plastic observation dome. The interiors are lined with a type of thermal foil, to strengthen radio signals, to reflect heat back into the cabin for warmth and to increase the balloon's visibility to radar while aloft.

While there were two bunks installed, with a stowage area under each for food, batteries, supplies and survival gear, one end of the capsule interior has a cabinet with all the nav-com instrumentation and a fold-down work table while the other end houses various sensors and more safety gear. On the top shelf of the cabinet are the basic balloon instruments - altimeter, variometer and altitude alarm, thermister, etc. The middle shelf has all the navigational

hardware, including a GPS (Global Positioning System) which can report the balloon's position to within 75 feet—the height of the balloon envelope. Satellite data communications equipment allows the team to send and receive telexes while in flight, and HF and VHF radios provide communication from the tracking center in Rotterdam to other aircraft and balloons, as well as weather map faxes to the on-board fax machine in each capsule. Also found in this cabinet is a Narco transponder and encoding altimeter and an alarm to warn the crew of an open gas valve.

Power is supplied by a generator that resides outside the capsule, suspended from the superstructure. This recharges the batteries inside, and has an alarm to warn against an overcharge. Also mounted on the capsule, is the all-important barograph—a new type, which electronically records everything from the time it is activated to shut down—even the fact that it was shut down. It weighs a scant half pound, yet once the FAI observers retrieve it, this barograph can be plugged into a printer, and viola!—out spits a complete barograph trace of the flight recorded. This compact instrument is so new the Chrysler Challenge used the first six models off the assembly line.

Also on board was a laptop computer containing not only a detailed global map, but several different programs custom designed for the flight— allowing the crew to monitor and/or calculate fuel consumption, duration available, speed, trajectory, etc. With allowances for factors like gas temperature, ambient temperature, pressure, etc. the technology aboard these revolutionary balloons is remarkable, even by modern day standards. Surely Messrs. Montgolfier and Rozier would be proud.

said Race Director Alan Noble. "Actually, it was very sporting of them." It may have made the difference for the Belgian team, when both they and the Germans fell into foul weather that caught up with the balloons after their slow progress the first couple of days. By Friday, Day 3, the teams were advised to keep to at least 5,000 feet, and were averaging about 30 knots.

However, a single cloud system moved in on the Germans and Belgians and both teams reported heavy precipitation in thick cumulus clouds including ice buildups. The Germans worked at riding it out while the Belgians climbed out above the cloud tops and in the process gained more speed.

"When we heard they were in bad weather and icing," said Noble, "we pulled up an infrared satellite map that showed one cloud in the entire area! It had them (the Germans). It was incredibly bad luck."

After 84 hours of flying, accompanied by high hopes, the Germans were forced to ditch their balloon some 1200 miles off the Newfoundland coast near St. John's. A long four hours later, a tanker, the *Granite,* was the first to arrive in response to the emergency beacon. In swells of over 20 feet, the tanker crew's efforts in the night saved both German team members, Jochen Mass and Erich Krafft, but they were unable to retrieve the capsule. Rotterdam information stated that a subsequent attempt would be made to save the capsule, meanwhile the *Granite* continued on with its two new passengers to its destination of Corpus Christi, Texas where the team was due to arrive October 1st.

As the other balloons approached Europe, matters got no easier. A southerly track developed, carrying them on a descending slope as they approached the continent. Further southwest, Hurricane Bonnie kept things interesting for the meteorology teams, lurking nearby but not advancing upon the balloons still over the ocean.

The teams tried several strategies to assure landfall. Most climbed for altitude to pick up speed to get them near or over the coast. Don Cameron elected to stay lower—about 4,000 feet at that point. The Dutch balloon went into an area of low pressure, and when they climbed to gain speed, they overtook the Belgians, but then their direction went sour, they turned north.

One ship in the vicinity followed the Dutch balloon through the Bay of Biscay, according to Noble, then handed them off to a fishing boat when they passed within 100 miles of the French coast. Continuing north, they then tried to make Britain and missed that by a scant 60 miles. Much to their chagrin, after crossing the Atlantic successfully, the Dutch found themselves steered away from land and facing a sea ditching instead.

A British sea rescue helicopter was dispatched, and with the fishing boat in nearby attendance, the Dutch team brought their balloon down into the water off the English coast. Donning their survival suits, Evert Louwman and Gerhard Hoogeslag jumped into the sea where they were rescued by the fishing boat's crew. When the helicopter arrived it was unable to retrieve the downed pilots from the ship's deck, so, in a scene from a comedy movie, the two were forced to jump back into the sea to be rescued all over again. Meanwhile the fishing boat was unable to winch the capsule aboard and with the hatch open, towing was not an option. Arrangements were made to again send a second vessel out to attempt to recover the capsule. Noble acknowledged that the balloon's envelopes were considered "disposable" although they will certainly be salvaged from the flight if possible.

Maureen Lynch

Don Cameron inspecting equipment before liftoff for the Atlantic race.

During the last forty-eight hours of the race, the US team was having problems with their power generator, and consequently their batteries were down. This cut off almost all radio communication with Rotterdam as the HF (high frequency) radios require vast amounts of power and the satellite communication system is also very sensitive to power fluctuations. Team USA was able to get a message to Rotterdam about their troubles and their weather advisors succeeded in getting out a quick synopsis and summary sheet by fax to the balloon. While they were able to, the team sent a request for clearance to enter Algerian airspace as their track was taking them toward a landfall at Morocco.

While Team USA could not report their position via the HF radios, the tracking center at Rotterdam took their last known position and tracking direction, then extrapolated the balloon's course based on weather information and their reported altitude. The center was able to supplement their efforts by phoning the air traffic control centers along their route to verify who had been in contact with the balloon (its transponder was still functioning). This allowed the center to keep tabs on the team's progress toward Africa and landfall.

The Belgian team crossed the coast first, and given it was early there, continued on for a daylight landing at Peque, Spain. The British reached the coast second, landing on the beach. The US team crossed third, continuing until daylight for their landing in Morocco.

While Team USA had plenty of fuel left their generator problems had left them with virtually no communications or navigation capabilities. Plus they still had not received clearance to enter Algerian airspace. A landing at Casablanca would have to be made in the dark, with large mountains nearby. Having accomplished what they set out to do—set a new world record for duration, Abruzzo and Bradley opted for the safety of a daylight landing. A military guard stood watch over the balloon until arrangements could be made to transport it while the two aeronauts were taken first to the American embassy, then on to a well deserved rest at the Hyatt Regency in Rabat. Ten minutes after they landed, clearance to enter Algerian airspace was received.

Race Director Alan Noble says the Dutch and German teams will not be disqualified for having ditched at sea—their distance will be calculated from the point of touchdown to the nearest road in Europe. Thus the official order of the first Chrysler Transatlantic Challenge was (1) Belgium, (2) Britain, (3) USA, (4) The Netherlands and (5) Germany.