



OPERATION BISMARCK

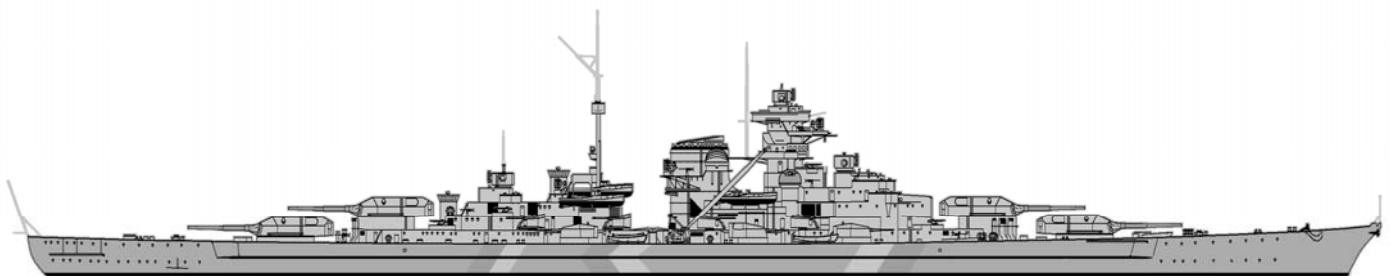
**May 30th – June 11th 2005
DKM BISMARCK – DIVE LOG**

IN CONJUNCTION WITH PP SHIRSHOV - ACADEMY OF
SCIENCES, MOSCOW

OPERATION BISMARCK

EXPEDITION PARTICIPANTS

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Thomas Ewert, Chicago, USA
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Martin French, London, ENGLAND
Gaylord Layton, Denver, USA
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Holger Herwig, Calgary, CANADA
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DKM BATTLESHIP BISMARCK - RV KELDYSH & MIR RUSSIAN SUBMERSIBLES

Day 1: May 30th 2005

Hamburg, Germany

Today we arrived in Hamburg, northern Germany and checked into the centrally located Steigenberger Hotel Hamburg. The day was spent at leisure taking in the sites of this picturesque city and buying last minute items for the next 10 days at sea. In the evening we joined the expedition's historian, Dr Holger Herwig for a casual dinner at the waterfront in the ancient seaman's restaurant Der Deichgraf. Hamburg is the true starting point of this expedition as it is the birthplace of the Bismarck which was launched here in February 1939 at the Blohm and Voss shipyards.



Day 2: May 31st 2005

Port of Kiel / Kiel Canal

An easy start today before joining with other team members for the 100km/60mile drive north to the city of Kiel. We managed to squeeze in a quick tour along the north shore of the Elbe River in order to see the slip from which the Bismarck slid down in 1939. Then it was off by van through the lush green countryside with its classic Holstein cows and studded with wind farms. Our expedition vessel, the Akademik Mstislav Keldysh is awaiting alongside the wharf in the same harbour that once provided shelter to the Bismarck. Expedition staff are on hand to meet us and we quickly settle into our rooms before enjoying a last walk (and last shopping) on dry land. At 1700 it is 'all aboard' as we make final preparations for sea, and meet together for the first to introduce the expedition members. Expeditioners hail from Germany, Russia, Canada, USA, New Zealand, Britain and Australia.

At 1800 hours the lines are cast off and we manoeuvre out past the German Naval Base to enter the famous Kiel Canal. Once through the gates of the lock, we follow in the wake of the Bismarck and traverse the German country side in comfort at 8 knots. It is a rare occasion that one can ride the bridge of a 6700 tonne ship and observe cows, people mowing lawns and families dining in their homes at close quarters! The 98km canal, completed in June 1914 for [then] modern dreadnought battleships joins Kiel in the Baltic Sea to the Elbe River just about where it flows into the North Sea on Germany's northern coast. We turn south-west and cruise through moderate seas and heavy coastal traffic. After dinner we enjoyed the sunset on the outer decks and then the lights of the coast of Germany as the day came to a close and many turned in quietly to shake out the last traces of jet lag.

Day 3: June 1st 2005

North Sea (off the Holland Coast)

We woke to moderate sea conditions, overcast weather and a great deal of maritime traffic on every quarter. Many of us took the opportunity to explore or refamiliarise ourselves with RV Keldysh, the world's largest research ship. At 130 metres/403ft in length, she is the ideal mothership for the 2 MIR submersibles, 2 of only 4 submersibles capable of descending to the abyssal depths of 6 kilometres (20,000 feet). MIR, meaning 'peace' in Russian, seems an apt name for these scientific voyages that transcend national boundaries to provide science and information about the planet's 'inner space'.

Having just ended an extended stay in port whilst the MIRs underwent their 5 yearly survey and maintenance programme, the ship is a bustling hive of activity as the crew of 80 bring her up to her normal operating standard. It was interesting to visit the bridge and watch the bridge officers guide Keldysh on her south-westerly course using radar to maintain safe separation from the many other ships nearby.

After breakfast we join Holger in the conference room for a relaxed discussion on the Battle of the Atlantic, and the world situation in 1941. The lecture set the scene for the week's lectures ahead as we proceed via the English Channel towards the Atlantic and the Bismarck's final resting place. After lunch, and a stint of ship spotting, Peter Batson presented a lecture on 'An Introduction to Life in the Abyss'. Later in the afternoon we received our safety briefing which was followed by our lifeboat drill, which, although it had its humorous moments, was performed professionally by the ship's crew. The luxury of brand new, modern lifejackets and well provisioned lifeboats and rafts are a far cry from the rudimentary lifesaving appliances available to the young men on HMS Hood and DKM Bismarck.

Prior to dinner, expeditioners were introduced to Dr Anatoly Sagalevitch, Head of the PP Shirshov Submergence Unit and Chief Pilot of the MIRs. Anatoly presented an overview of the MIR programme and the pioneering work undertaken by these marvels of modern technology.

Dinner was a relaxed affair, with excellent cuisine being produced by our two superb chefs; Phil Algar (New Zealand) and Michael Holtz (Germany) and served by our two delightful Russian stewardesses, Ludmila and Larissa.



Day 4: June 2nd 2005

English Channel

Today we traversed the English Channel, and during some of the brighter weather of the day it was possible to see both France (to port) and England (to starboard) at the same time. We tracked down the outbound shipping channel in good conditions, which made for steady comfortable progress and allowed good viewing of the 'white cliffs of Dover' during the clearer spells. After breakfast, Holger took up the story of Bismarck's last journey via Norway through the Denmark Strait (between Iceland and Greenland), provided the background to Operation Rheinübung and then the events that culminated in the sinking of the battleship Hood. Late morning we viewed the National Geographic production featuring Bob Ballard's hunt for the wreck of the Bismarck, which first ended up finding an old sailing ship before a follow-up voyage found the Bismarck itself.

After lunch, Peter gave an insight into 'Life in the Deep' and introduced us to some of the weird and wonderful creatures that have adapted to the pressures and challenges in living in the permanent darkness and crushing pressure of the abyss.

In the late afternoon, Anatoly introduced the Al Giddings production on the joint US/Soviet/Canadian expedition to the Titanic in the early 1990's which heralded the new-age opportunity for Western groups to join with the PP Shirshov Russian Academy of Sciences to use the MIRs on diving expeditions to the abyssal depths all around the world.

In the evening, many of us viewed a DVD of the epic mountaineering survival tale 'Touching the Void' and whilst those with fortitude endured the whole film, the more prudent opted for an early night. Everyone enjoyed another hour in bed as we wound our clocks back an hour onto Greenwich Mean Time.

Day 5: June 3rd 2005

South of England.

Today's weather was appropriately traditional English summer weather. Foggy, cool but calm conditions kept the watch officers on their toes and even had the fog-horn being used occasionally.

Our first activity today was with Holger as he continued his story of the chase and eventual sinking of the battleship Bismarck on 27 May 1941. Most passengers had prepared themselves well for the epic saga and sparkled with lively discussion.

After lunch we settled in to watch the DVD of James Cameron's superb production entitled simply 'Bismarck'. This masterpiece gave a terrific insight into the history of the destruction of the Bismarck, a re-creation of the mechanics of the sinking and superb footage of the major features of Cameron's six dives themselves. Later in the afternoon we met Anatoly in the conference room for a discussion on the MIRs and the work being undertaken by the scientists of the PP Shirshov Institute. Whilst viewing the accompanying video, we learned of the many fascinating projects that have been achieved by the MIRs during their exciting history. Anatoly, the MIR chief pilot and veteran of almost 400 submersible dives, was able to review dives to undersea volcanoes, hydrothermal events and to sunken submarines, which all served to illustrate the versatility and efficiency of these machines and the crews that maintain and pilot them.

Perhaps because of the traditional 'sundowners' in the bar, dinner became a rather raucous affair and ended with most expeditioners meeting back in the bar for a few too many nightcaps during a long series of storytelling (of tales both and true) and the odd off-colour joke. It was clear that an air of familiarity was forming amongst the team!

Day 6: June 4th 2005

North Atlantic Ocean.

The swells that built during the night indicated our passage into the Atlantic Ocean, yet despite the moderate seas, the day dawned fine and sunny (if a little blustery).

The first activity of the day was the opportunity for a little bit of retail therapy. The range of Bismarck and Titanic souvenirs on offer was eagerly scooped up and ensured that for a few passengers at least, washing day could be postponed for a couple of more days!

At 0930 Holger gave a presentation on his 2002 dive on the Bismarck during James Cameron's filming expedition. He shared his personal insights and recollections as he read aloud from the diary he wrote at the time, which allowed all of us to share in the excitement and enthusiasm of a dive to the Bismarck. At the end of the presentation, Belinda showed several stunning images taken during a dive to the wreck and, together with Holger, was able to well and truly whet everyone's appetites for a real dive on the genuine item!

In the afternoon Anatoly introduced that latest James Cameron film, the IMAX production entitled 'Aliens of the Deep'. Filmed in 2003 and only released in early 2005, the film gives incredibly clear images of life around hydrothermal vents, or smokers. So little is known about these vents, even now some 30 years after their discovery, that it is clear that the role of submersibles to explore the planet's 'inner space' will be imperative in future years.

In the afternoon, Monty, Bob, Tom and Gaylord joined the sub team down on the dive deck for a brief visit to the MIRs. This familiarisation would enable the divers to ask any questions and to acquaint themselves with their vehicle for the upcoming dive. The excitement was visibly mounting!

Day 7: June 5th 2005

Arrival at Bismarck site.

The first activity of day was Peter's presentation on 'The Hunt for the Giant Squid', and since 2003, the hunt for the colossal squid. These huge creatures (up to 20m/66ft) in length are considered by many scientists to be the 'Holy Grail' of biological science investigation and are sure to keep interest in deep-sea exploration at a high level for many years.

We arrived at the site of the Bismarck wreck, some 400 miles due south west of Brest, France, in the eastern North Atlantic Ocean at 11.46am. Keldysh heralded our arrival with three mournful blasts on the ship's horn as we gathered on the aft deck to toast our arrival. Holger delivered a few quiet words to remember all of the brave terrified young men who had died at or near this place in the madness of war, with the sincere hope that it never happen again. Please God. Standing in the weak springtime sun, it was difficult to appreciate that although Bismarck sank at almost the same time of year and at the same time of day, conditions on that fateful day were horrendous. The survivors of the initial sinking went into an oil covered ocean in a force nine gale, with 50 mile per hour winds and huge seas.



Shortly after our arrival, the submersible teams swung into action to launch both MIRs on a short technical dive to conduct a final test on their systems prior to this season's diving schedule beginning in earnest. We lined the rails to get a great vantage point from which to watch the orchestrated ballet that surrounds a MIR launch. It was clear that the subs are in the hands of professionals as the 18 tonne machines are lifted gently, swung over the side, lowered into the sea and then towed away in a flawless fluid motion with no signs of yelling, shouting or other tension.

After lunch, we spent the afternoon watching the MIRs being retrieved and marvelled at the skill of the boat crews, deck hands and 'cowboys' in getting the MIRs tethered, hoisted and secured aboard with well practised efficiency. Later that afternoon we enjoyed a presentation by Dr. Sergei Galkin, a resident biology scientist aboard Keldysh, who described the world-leading scientific work and achievements that the MIR team has accomplished. The work that is in progress on the hydrothermal events of both the Atlantic and the Pacific, the Chief Scientist reminded us, illustrates that whilst so much has been learned in recent years, the wonders of the abyss will need to be continually explored before many of the basic questions facing scientists are answered.

Whilst we listened to the lectures, the Keldysh team began to lay out the transponders on the ocean floor around the vicinity of the wreck site. These transponders will allow the MIRs to navigate safely in the great depths that are well beyond the range of conventional navigation systems. By establishing a grid around the wreck site, then calibrating this with the GPS coordinates monitored aboard Keldysh, the MIR pilots are able to accurately navigate their way around.

Dinner was a great social affair with the theme of 'Russian Night' to celebrate our arrival at the Bismarck site that we had travelled so far to see. Frozen vodka, borscht and Pelmini were featured on the menu and we enjoyed good food and good company in an air of anticipation on the eve of this, the deepest of dives.

Day 8: June 6th 2005

DKM Bismarck Dive Site

We assembled in the dining room for breakfast- the room was filled with a sense of excited anticipation. Alas, after the announcement of a short delay, Anatoly gathered us into the conference room to give us the news that due to a technical fault in the navigation system used by the MIRs, it would be necessary to delay the dive until the following day. He stressed that he wanted everything in perfect order, and rather than rush his technicians by putting pressure on them, he preferred to give them ample time to ensure a perfect outcome. We concurred!

The divers took the opportunity to show off their dashing MIR suits, and many photographs were taken of the team looking the part. Anatoly commented that it looked as though a couple of suits had been slept in last night!

To keep the appropriate spirit alive, we watched the 1960 production 'Sink The Bismarck' starring Kenneth More and Dana Wynter, and whilst this was never going to be a blockbuster, it was haunting watching the story over the very site of the wreck, almost 16,000 feet below us.

In the afternoon Bob Williams gave a presentation on the Titanic and provided a well researched alternative theory as to how the 'Ship of Dreams' had come to grief and broken up. He provided a good hypothesis and some sound research, as well as giving expeditioners an insight as to how a canny mind can arrange repeat visits to their favourite wrecks! The discussion was lively, to say the least.

Prior to dinner, Martin French was taken on a tour of the dive deck and shown the interior of MIR 1 – which seemed to have been tailor made to fit!

During dinner the Russian crew were given the opportunity to view 'Aliens of the Deep' on the big screen in the dining room. This was the first time that they had had to watch the IMAX production and to see themselves on film.

Day 9: June 7th 2005

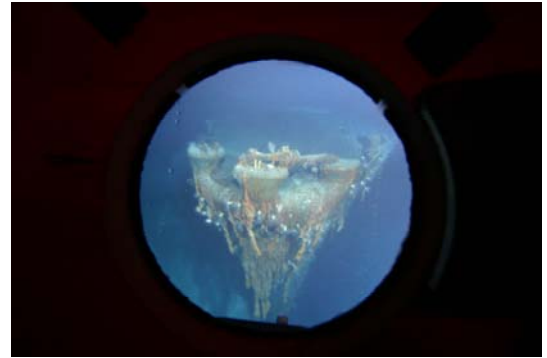
Dives 1 and 2 to the DKM Bismarck

Great excitement was felt by divers and non-divers alike as we commenced the dive day that had been the subject of months of planning, negotiating, organising and implementing. In perfect conditions; calm seas, pleasant temperatures and fine weather, we headed out to the after-deck to watch the launching procedure. Bob and Monty boarded MIR 1 with their pilot Anatoly Sagalevitch whilst Thomas and Gaylord mounted MIR 2 with their pilot Genya Chernalev. At 10:17am MIR 1 was loaded gently into the sea and at 10:24 she commenced her dive. MIR 2 followed at 11.05 and began her descent at 11.09 as the two sister submersibles commenced their 2 hour 45 minute journey to the ocean floor some 4700 meters below.



Some of the things that were seen and photographed included:

- Brass shell casings from Bismarck's 15-inch guns.
- One of the four 15 inch turrets that fell off the ship when it sank.
- One of the turret's large gun barrels poking out of the sediment.
- The ship's entire length, with a 'flyby' down the starboard side and then back aft over the top of the vessels' deckhouse.
- The three propellers with one of the two rudders folded over the centreline propeller. This is the reason Bismarck could not run away from her final battle. All she could do was turn and turn, waiting for the end.
- A couple of ordinary aluminium teapots for crewmembers' use.
- Leather boots scattered along the ocean floor.
- The giant swastika painted on the teak-covered main deck near the stern. It was here that Hitler had once stood while inspecting the crew.
- A couple of very badly decomposed scout planes (the ship carried four). We could see camouflage paint and some sort of squadron insignia on the side of one of them.
- Miscellaneous bits of machinery isolated on the seafloor.
- The "Admiral's Bridge" which was attached to the ship's great main mast. It had apparently ripped away from the hull when it made its plunge to the seafloor. This massive assembly had speared into the seafloor upside down.
- The hole where the Bismarck's huge funnel had been located. Apparently, it too was torn off in a single piece.
- There were huge holes (up to 16 inch size) in many, many places on the superstructure where British shells from two battleships had penetrated the massive (up to 14 inches thick) armour on Bismarck.



For those remaining on Keldysh, the ship seemed much quieter and made for a relaxing day broken only by lunch and the chance to visit the MIR navigation laboratory. Here we were bale to see the position of the 4 transponders on the ocean floor and the relative positions of the two subs. We could here the communication between the MIRs and up to Keldysh very clearly. The system in use by the team seems simple in design, yet proves to be effective and practical in its application – as many Russian innovations undoubtedly are!



Day 10: June 8th 2005

Dives 3 and 4 to the DKM Bismarck

For Martin and Belinda this was a chance to follow in the footsteps of the intrepid explorers of the day before, whilst for the other divers it was the chance to see the launching process for the other side of the perspex! Both MIRs were successfully launched mid-morning in what can only be described as ideal conditions. A good turn out on deck ensured both MIR 1 with Martin French, Belinda Sawyer and Genya Cherniaev [Pilot] and MIR 2 with Vladimir Petrovsky, Dr Sergei Galkin and Victor Nischeta [Pilot] were farewelled in fine style.

The day was fine and relatively warm, though the sea breeze began to rise in the afternoon. Today was a quiet day on board – a chance to reflect and rest after the excitement of the day before. The divers had the opportunity to tour the MIR Navigation laboratory and meet with the team charged with keeping detailed track of the MIRs whereabouts, both in relation to Keldysh and to the four transponders laid out on the ocean floor. The team also monitor all radio communications between the MIRs and the ship, with every conversation carefully transcribed and entered into the dive log.

Mid afternoon we took timeout from editing photos, writing up notes, sunbathing and reading to visit the ships engine room. This huge array of infrastructure is hidden below decks and scarcely given a second thought, so the opportunity to take a tour of this machinery in the company of the ships 2nd Engineering Officer was gratefully received. Keldysh' 4 main engines, 2 main auxiliary engines, reduction gears, propeller shafts and compressors were all on display in an engine room. The comment was made that with the plant originating from Sweden, Finland, France, Russia and Britain, the engine room seemed to have been assembled by the United Nations!

A great sunset was on offer prior to dinner so drinks were enjoyed on the upper deck as we waited for the reappearance of the MIRs. After dinner, the long wait culminated at 0115 when MIR 1 surfaced in moderate seas. The skill and efficiency of the recovery team was well demonstrated as the MIR was secured, bought alongside and hoisted aboard with safe efficiency.

As we slept soundly through the early hours of the morning the MIR navigation team and the ships bridge officers worked together to recover the transponders that had been released by remote control from the ocean floor below.



Day 11: June 9th 2005

Departing Bismarck site, en route Cobh, Ireland

By 0600 we had successfully recovered the transponders from the now turbulent sea and were making our way in sunny conditions towards the south of Ireland and the port of Cobh.

The first activity of the day was a lecture from Peter entitled 'How to live at 12000 feet' which featured many fantastic images and hand drawn pictures of some of the creatures of the abyss.

Dr Anthony Lowe presented an informal lecture on Motion Sickness: Symptoms, Causes and Therapies, which many of us could relate to having experienced this topic in real life aboard other vessels. Fortunately the relatively calm seas, Keldysh' large size and her stable nature prevented any serious maladies relating to motion sickness on this voyage.

Later in the afternoon (for those not napping), a DVD of the BBC's Blue Planet series was shown, with the episode on deep-sea life taking star billing. We were astounded at the images of rare creatures and interesting phenomenon that had been captured by the BBC team who had clearly deployed many innovative techniques to capture there inspiring images.



At 6.00pm, Anatoly, Genya and Captain Yuri joined us in the bar for celebratory drinks and the presentation of certificates to all members of the expedition. He offered his thanks to all of those who had taken part in the expedition and entered into the spirit of deep sea exploration. He made a special thanks to those who had dived on the first day and been the 'Test Pilots/Aquanauts' involved in taking the MIRs to 4695 metres on their first real deep dive since their major overhaul last year.

The night was windy and cool, but the fine conditions and committed efforts of the sun lured us out onto the pool deck for a barbeque dinner coordinated by our wonderful chefs, Phil and Michael. Captain Yuri veered the ship 20 degrees so that the windage across the deck was minimised, and we enjoyed brisk alfresco dining in this most exclusive of locations.....this was easily the best restaurant for 150 miles!

After dinner we were joined by the members of the MIR submersible team who were holding a party to celebrate the end of the successful year of over haul, the being at sea together again as a team, and the start of a whole new diving season. Vodka, wine and 'Sheila' were the weapons of choice, and many expedition members were introduced to 'Sheila' for the first time. This secret brew is manufactured deep below the main deck in a time offered Russian maritime process that can never be revealed (or remembered!). The party continued into the night, although once the sun set the bracing wind encouraged the festivities to relocate into the warmth of the bar.

Day 12: June 10th 2005

En route Cobh, Ireland

An easy day today. We spent the time pack up our gear, comparing notes and images, reading and enjoying the glorious warm sunny day in very calm sea conditions. It was remarked that it's not often one can get sunburnt in the south of Ireland, but we managed to pick one of those rare days where the winds died away and there was not a cloud in the sky.

It wasn't all play and no work however. In the morning Peter gave a presentation on "The Deep In Trouble" which proved most interesting and sparked a great deal of discussion over lunch. Anatoly joined us for a short time and presented all expeditioners with a set of photographs taken during the expedition – something we will be able to show friends and family on arriving home.

After lunch we relaxed on the pool deck in the sunshine, or caught up on a little reading. Martin managed to secure a tour of the engine room whilst others got their chance to see the inside of a submersible. In the late afternoon Belinda ran a slideshow of some of the images that had been captured during the expedition. The slides underlined the great voyage that we had undertaken, the adventures that we had shared and the new friends that we had made.

Dinner was a festive occasion with a special (even more special than normal) banquet laid on by our two culinary artistes. The wine flowed freely and everyone was in fine form by the time we migrated to the bar for a round (or two) of nightcaps. Anatoly entertained us with his guitar and fine singing voice and the night ended in great spirits.

Day 13: June 11th 2005

Arrival Cobh, Ireland and Disembarkation

We awoke to a perfect dawn.....a mirror calm sea and a light fog as the sun broke through – and then at last through the rising mist we could the emerald isle of Ireland and the rolling hills that are the backdrop to Cobh. During breakfast the local pilot boarded us and guided us past Titanics old anchorage, up the channel

and alongside the deepwater quay immediately adjacent to the main street. The gay'ly painted houses and the inspiring cathedral provided a warm Irish welcome as this perfect summers day heated up.

As we made our farewells there was a hilarious scene as we loaded up the taxi with 4 expeditioners (and gear) only to have it stop 100 meters away outside Bob and Monty's hotel. Welcome to Ireland! This picturesque town was the last port of call for the Titanic. After leaving Southampton and Cherbourg, she called in here to pick up the last of the mail bags before heading west on her short, tragic, famous maiden voyage. The chimney standing to the starboard marks the spot of the 'delousing' facility where convicts bound for Australia in the early 1800's were washed and fumigated before setting sail to the colonies. With Keldysh safely alongside, it was time to farewell the crew, the staff and our fellow expeditioners – now firm friends having shared the unique experiences of the last 2 weeks. As always, it was good to be back on dry land, but as Keldysh prepared for her Atlantic crossing to Newfoundland and the 'Titanic' dive site, a small part of each of us were thinking ahead to new horizons and other adventures.....

Best wishes for safe travels and great adventures
The team at Deep Ocean Expeditions.

