

# Mount Everest Expedition Case Study

Group 4

Jinghan Luo, Tony Teleky, Ryan Finlay, Malavika Khatav

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Professor Delgrosso

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## **Executive Summary**

### **Background**

The team 4, recently undertook one of the most arduous mission: The Mt. Everest Expedition. At 29,028 feet, roughly about 8 kms above sea level, Mt. Everest is the highest peak on Earth. In our attempt to conquer the ascent to the summit, we were faced with numerous challenges under the most hostile conditions. While most of our team members successfully reached the summit, a couple or less stayed back owing to critical health conditions and personal goals.

The purpose of this report is to provide guidance, strategic planning and information for future team formations to climb the summit, particularly to The Chandler Foundation. We hope our experience and knowledge will successfully aid them in the planning and production of their Netflix series.

### **Current Situation**

This expedition is not for the faint-hearted. The winds routinely reach hurricane speeds and are frequent with snowstorms and avalanches. The strong conditions often induce frostbites and only 30% of oxygen is available for breathing. Owing to the treacherous path and limited days in hand, the team formation and dynamics are the most crucial step towards the expedition. Our team consisted of 5 members with varied expertise. A few of them having already climbed the summit more than once before. But this time, everyone came with different goals and objectives, but with a common mission to ascend the Summit.

With limited resources and less than a week to complete the entire expedition, the entire journey was based on the following points : Sharing personal goals and objectives before the

start, discussing the plan of action and details of each day, constant open and honest communication, making the most of your personal experience and expertise to help your team, and prudent use of resources.

## **Analysis**

The Team of 5 consisted of the Leader, Environmentalist, Physician, Mountaineer and the Photographer. We completed 70% of our goals with 4 out of 5 members successfully reaching the Summit.

In this report we have analyzed our entire expedition based on the following strategic insights:

- 1) Developed a three 3-way process at each camp site: where every member will share with the team basic 3 updates – Information updates by each member, Personal Health and Personal Goals.
- 2) We overcame 1 of 3 of the challenges, the oxygen challenge was successful however we failed to crack the rope and the health challenge. We believe the failure was due to lack of core expertise on those topics, and the success was due to open communication and collaboration.
- 3) We evaluated the performance of everyone by introspecting what went well, what went wrong and the possible improvements and listed 4 important lessons learned.

## **Recommendation**

### **1. Team formation and characteristics**

We believe from our experience that a small team would be the most beneficial for this expedition. We Recommend the Chandler foundation to have a team of 5-10 members with a range of different skills.

An experienced and seasoned leader who has been on previous expeditions before should be the team's pillar of strength and resilience. Next the need of having a licensed physician is of utmost importance.

The filming of this expedition for the Netflix series will pose different challenges than what the usual team would experience. Hence in our recommendations we first have defined the necessary roles needed for every member of the team, and next we have emphasized on the specific qualities that each member needs to possess. We have emphasized the most on commitment to common and shared goals, and communication.

Summarizing 4 characteristics that are non-negotiable and must be established before the climb are clear decision-making process, full participation by each member, constructive conflict through clear and open communication and meticulous attention to detail.

## **2. Filming considerations**

We recommend primarily using a modified ARRI Alexa IMAX Digital Camera, which provides the opportunity for a cinematic viewing experience while still weighing in at only 23 pounds. A team of three multifaceted specialists should be able to provide a dynamic film team: a director/interviewer, an Alexa cameraman, and a drone pilot/cameraman. Although these three will be passive observers of the rest of the climbing team, they must also be willing volunteers in the event of an emergency. All filming equipment will be split for carrying between these three individuals, resulting in a carrying load of approximately 20 pounds each. For more technical information regarding specifically the experience of filming in IMAX on Mt. Everest, we recommend consulting with Greg MacGillivray and David Breashears, the directors of the 1998 *Everest* documentary.

## **Introduction**

The team for the Mt. Everest expedition consists of a diverse team consisting of climbers, guides, Sherpas support personnel and numerous yaks. The first step towards this goal, when you reach Nepal is acclimatization, which is very crucial for the health.

The journey starts at the Base Camp, which is at 17,500 feet, where the team must spend a couple of days training. There are 4 camps above the base camp, which are used by climbers to ascend the summit. Camp 1 is located at 19,500 feet where you will need to traverse the dangerous and difficult Khumbu icefall. Camp 2 and 3 are at 21,300 ft and 23,500 ft respectively. Camp 3 only has half of the oxygen available. Camp 4 also called as the Death zone due to very low level of oxygen content in the atmosphere that cannot sustain human life more than a brief period. At this point most of the climbers use supplemental oxygen. On the last day, that is Day 6, you begin your final step towards the summit, which starts overnight.

Throughout the 7 days expedition, you have 4 important factors to monitor, first and the most important being your health: Mental acuity, Frost bite and altitude sickness. Any sign of sever risk must be administered with the right kind of medical aid from the physician. It is important to keep in mind that there are limited medical supplies for the entire team and must be used judiciously. The weather conditions and hiking speed must be monitored and predicted every day, which are the last two important factors.

Towards the 2<sup>nd</sup> and 3<sup>rd</sup> day the physical and mental health of our team member began deteriorating, and the goal here is always to avoid rescue. We were not able to administer the right dosage but got help from fellow climbers. Day 4 was all about calculating the distance of

the rope that was cut and trying to achieve personal goals keeping in mind the benefit of the entire team. There can be conflicting interests at this team, but a good sense of team spirit and communication goes a long way at this point. The final two days are about survival, fitness and fighting against the hostile environment to ascent the final leg of the summit. Having appropriate amount of oxygen cylinders for each member is very crucial at this point. Keeping all these steps and tips in mind, we were successful in completing our expedition with no casualties or rescues needed.

The following pages will give detail analysis and recommendations for the Chandler Foundation's team formation and Everest Expedition for the Netflix documentary.

## **Everest Simulation Overview**

In this simulation, we have five role types and four participants. Roles include leader, physician, photographer, marathoner and environmentalist. Due to limitation number of participants, one of our team members played roles of photographer and environmentalist. Each member has a set of goals individually and overlapped as a team.

### **Preparation**

At the beginning stage, everyone stated their personal goals and corresponding priorities. Everyone has a comprehensive view on what we should achieve and reach consensus on common goals before we start. Also, we choose Zoom Meeting to communicate and understand no barriers would attribute to this part.

### **Under way**

The time for summit is six days in total, and there are five sections of climbing which provide us one day break to stay at any camp. Temperature continues dropping and new situation appears each day. The hiking speed and supplies status also got changed in real time. To better understand which actions we could take as a team and as an individual, we developed a way for each of us to consider during the climb. Each member has three main aspects to look at:

- a) Information updates, making common decisions towards next period. In this part, there exist three challenges which summarized at the end
- b) Personal health, reporting to physician and decide which supply is in need
- c) Check personal goals at each camp and decide whether to achieve it or not

## **Results**

As a result, we overcame 1/3 hidden challenge. The oxygen challenge is the one we succeed through, while health and rope challenges failed. The minimum survival needs are met, which appeared as no one need rescue, and no one need to return base camp at last. Leader, physician, marathoner and photographer reached summit, while environmentalist stay at camp 4 in the end. The final average score is 70%, which is similar to our individual score. It shows a great balance between personal and team goals achievement.

## **Experience**

### **Whole Team**

The whole process needs strong collaboration among team members. One outstanding point is that we communicated well and immediately as this was the first time to finish a project as a team. Each member knew their responsibility clearly and no confusion happened during the climb. The atmosphere is always positive and harmonious. Everyone knows that nothing could



be changed what happened in the past. Therefore, we draw on the lessons of the past to meet new challenges together. We kept a cohesive team spirit and made adjustments to better accomplish this mission. When we failed on rope challenges, there is another team came by and help us. External assistance contributed to our success, and we believe this has powered us to help others while working.

### Individuals

Based on results, we evaluate performance of each and figure out possible improvements in the future.

	What went well	What went wrong	Possible Improvements
<b>Leader</b>	<u>Leadership-</u> Ability to control situation, good allocation of oxygen, no one need rescue	<u>Rope Challenge-</u> Could not attribute to leader alone, members should all find a feasible way to solve it.	Look before you leap. Organize more discussion and think deeply.
<b>Physician</b>	<u>Inquiries-</u> Ask each health state and communicate, stay with member who need help	<u>Health Challenge-</u> Made wrong decision on health issue of environmentalist, saved by other teams, no rescue happened	Be more familiar with symptoms and corresponding medical supplies needed. Think deeply when face challenge, e.g. rope
<b>Photographer</b>	<u>Cooperation-</u> Cooperate with members well	None	Think deeply when face challenge, e.g. rope
<b>Marathoner</b>	<u>Temperature Prediction-</u> Predict correctly most of the time	<u>First day Temperature Prediction-</u> Lower than thought, no great negative impact	Think deeply when face challenge, e.g. rope

<b>Environmental</b>	<u>Timeliness-</u> Communicate requirements effectively	<u>Final location-</u> Did not reach summit, but is due to health issues	Think deeply when face challenge, e.g. rope
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## Lesson Learned

There is no doubt that team grows through continuous running-in. The Everest Expedition gave some insights on what the teamwork should be like.

- a) Always Stay Proactive- When we failed at rope and health challenge, team still keep proactive after that. The ability to look ahead and to focus on current problems enable us to succeed through oxygen challenge.
- b) Communication- Communication is very important in teamwork. By communicating, members could know which page others is in and adjust their own decision in time. Especially in a tough situation, good communication could avoid severe problems.
- c) Trust- Team members should trust each other and consolidate connection, which would benefit atmosphere in a frank way. In this case, members trust physician to provide them with medicine.
- d) Leadership & Followship- Leadership is the key aspect to make right decision at right time. Good followship could also help team head into right direction. These characteristics could let team solve problem fast and efficiently.

## Team Selection and Recommendations

As discussed in the previous section, our team was able to reflect and learn from the challenges faced during our Everest expedition and will be able to specifically outline the steps needed to form a cohesive team that will fulfill the Chandler Foundation's objectives. To summarize, the Chandler Foundation should be looking to form a team committed to the foundation's mission that is built on trust and exhibits excellent communication. In this section,

we will discuss the how to go about picking this team, what the necessary requirements are for personnel, and how the team will need to mesh in order to carry out the specific tasks related to summiting Mount Everest.

To begin, the Chandler Foundation must first craft the team that will be undertaking this climb and producing the Netflix series. Learning from our experience during our previous climb, it is clear that a smaller team has more advantages than a larger team for this type of objective. Our climbing team included five climbers that had a range of different skills. While our objectives were slightly different than that of the Chandler Foundation's we recommend a team of five to ten experienced climbers that will be able to carry out this project's goals. We recommend a team of this size because as teams grow larger it often becomes more difficult to have quality decision making and full commitment. Next, we would like to discuss specific team member criteria and requirements. First, the team needs a leader that has preferably summited Mount Everest before and will be comfortable leading a climbing expedition. Part of what made our previous climb successful was that we had someone who was experienced in climbing Everest and could use their knowledge in order to solve various problems throughout the duration of our climb. One of the most important things about an Everest expedition is making sure everyone is safe and healthy, which is why we also recommend that at least one of the team members be a licensed physician on top of being an experienced and qualified climber. There is no question that having a physician present on our climb proved to be extremely beneficial to our success and it will be crucial in order to make sure the Chandler Foundation's team is healthy throughout the climb.

While it is important that our team is able to summit Mount Everest together in the upcoming climb, that is not the only reason that the Chandler Foundation has sought our guidance, and the filming of this expedition for a Netflix series will present a number of additional challenges that are slightly different than what the usual Everest team would experience. The team must not be chosen only to climb the mountain, but also to document it through film for this series. Because of this, the Chandler Foundation must seek additional team members to act as photographers and as a “camera crew” of sorts for this climb. These additional requirements obviously include being certified and proficient in photography and film making on top of being skilled climbers and physically and medically able. More considerations and recommendations for the film making aspect of this project will be included in detail in the following section. Finally, our team must include at least two guides with extensive knowledge of the mountain, one of whom will be our team leader who oversees decision making and the expedition itself as mentioned above. Numerous Sherpas will be necessary as support personnel throughout the climb as well. This composition of team members has been strategically devised to carry out the objectives of the Chandler Foundation – to successfully summit Mount Everest while documenting the climb for the production of a film series.

Next, it is important to discuss the specific qualities that these team members must possess and how they relate to executing the desired goals of this climb. First and foremost, the team leader is going to be a key component to the success of this project and will have to be chosen carefully with a few different qualities and characteristics in mind. As mentioned earlier, the team leader must be a very skilled climber with extensive knowledge about Everest who will be able to guide the team up the mountain safely. In addition to those skills, the team leader must

also exhibit natural leadership skills that prove he or she able to manage and lead a team of five to ten people up one of the most dangerous expeditions there is. He or she must be proactive and exhibit excellent communication skills while keeping in mind the health and safety of his or her teammates throughout the climb. Other skills that are mandatory for our leader is someone that is direct, honest, and is a “project champion” for this climb. Leadership is undoubtedly a “contact sport,” and our leader should not shy away from conflict but rather promote constructive disagreements in order to make informed decisions while moving up the mountain. At the same time, a successful team not only requires a strong leader, but also a cohesive unit that includes strong followers or support cast.

A leader cannot lead if he or she does not have people following, and therefore every single team member will be just as pivotal to success as our team’s leader. Just as we outlined for the team leader, the other members of the team must exhibit specific qualities that the Chandler Foundation must search for when selecting the team. Overall, every single team member must be committed to the goals of the Chandler Foundation in this project to succeed. When internal motivations creep in and begin to overshadow the goals of the collective team unit, that is where conflicts and issues can arise. Excellent team members will be chosen for their commitment, competency, integrity, and ability to self-manage. Unsurprisingly, the qualities that make these members good teammates undoubtedly translate to leadership qualities as well. With the first step completed and our team outlined and selection criteria put in place, it will also be important to briefly outline how the team may come together to succeed. While the selection of the team is important, it is even more pivotal that this team mesh together to move toward its organization’s goals.

As with any organization and team, the first step towards accomplishing the goals of this expedition is to craft a mission statement. The mission for this climb should be clear and concise, such as the Chandler Foundation's climbing team's mission is to summit Mount Everest as a team while capturing quality film in order to produce a documentary series. All the decisions made during the course of planning and executing this climb must be made in accordance with the team mission. From here, the team must set the strategy and objectives for this climb. Obviously, a couple of the objectives are included in the mission statement, such as summiting Everest and producing high quality film. With these objectives in mind, it is important for the climbing team to formulate a strategy to succeed. The strategy must be carefully considered because it is with the implementation of the strategy that will push the climbing team to success. With our personnel criteria in place, strategy may include equipment necessities, speed and pace of the climb, and of course considerations for film making. To successfully carry out the mission of the Chandler Foundation, our team must build cohesion and move as a single unit working together in unison. Four characteristics that are non-negotiable and must be established prior to the climb are a clear decision-making process, full participation by each team member, the ability to work through and not shy away from constructive conflict through clear and effective communication, and a meticulous attention to detail. With these standards put in place by the Chandler Foundation, our team will be able to successfully face all the challenges that will arise during the execution of the foundation's goals.

## **Film Considerations and Recommendations**

The first major film specification to make is the type of camera used. Many individual climbers can use portable personal cameras or action cameras (GoPro) to vlog their own experience on the mountain. Although this is the cheapest and easiest option, it lacks the professional film quality that Netflix would desire. However, the final intended viewership is important to consider. If the film series will only be shown on smaller, personal devices (mobile, computer, and TV) then a typical 30-pound camera will be needed. If Netflix desires a more cinematic look and quality to potentially show in movie theaters, IMAX is the best camera to consider to fully capture the grandiose nature of Mt. Everest. Due to Netflix's recent interest in more cinematic production qualities, we will assume IMAX is the preference.

A huge hurdle to overcome is the size and weight of the IMAX camera. In 1998, Greg MacGillivray and David Breashears managed to get an IMAX camera up Mt Everest for their documentary *Everest*. They coordinated with the hardware design division of IMAX to reduce the weight of the IMAX camera from 88 pounds to 44 pounds, a manageable load for a Sherpa. Currently, the 3D IMAX camera currently weighs in at over 240 pounds and the technology does not exist yet to shrink it down to a more manageable size and weight while handling potentially -30-degree temperatures. The technology has proceeded faster for 2D, reducing its weight from 44 pounds to as low as 23 pounds on the ARRI Alexa IMAX digital camera. This camera will allow you to film in 6K, providing your postproduction team with plenty of footage to edit around the frame. The camera will need to be modified to accommodate the extreme temperature conditions.

Another aspect of filming is the desire for B-roll and soaring landscape views. Bringing a crane up Mt. Everest is not possible but flying a drone camera is. Many drones (with or without

propellers) are equipped with cameras that rival the Alexa in resolution. However, these smaller camera sensors will not capture much depth of field, so if that is desired special modifications will have to be made. The drone pilot will need to accommodate for the reduced oxygen at higher altitudes and how that effects lift.

Every member of the film team needs to be a multifaceted member of the climbing team. We recommend a three-person filming team: a director, an Alexa cameraman, and a drone pilot/cameraman. The drone specialist will serve as the technical grip/assistant for the Alexa cameraman and vice-versa. The director will also serve as the interviewer for any “talking head” interview scenes at camps during the climb.

To accommodate the distribution of weight amongst the film team we recommend the Alexa cameraman carrying the ARRI Alexa, the director carrying any specialty lenses for the Alexa and its solid-state storage devices (SSD) holding film files. The drone pilot/cameraman will carry the drone, any specialty lenses for the drone camera, and any remaining SSDs.

The director must work closely with the climb leader to ensure a safe working environment for both the film team and the film subjects. It is typical for documentary-style film crews to remove themselves from the situation and passively observe catastrophic human conditions. To avoid this, we recommend that the climb leader have final say on all decisions regarding the safety of the climb and have the right to demand the film team’s assistance in any emergency.

## **Conclusion**



This journey starts with a dream, practice and lots of determination. But you can only conquer the summit together as a team. Every member has unique expertise and goals, and it is crucial to the end success.

Our report starts with defining our journey on the Mt. Everest Expedition, analyzing our decisions and action taken on each day, understanding what went wrong and what could have been better. But also, proactively taking charge of our mistakes and mitigating the risks. We believe we had the right set of team dynamics and responsibilities that led to our victory.

In order for the Chandler foundation to make the best Team and create a fine documentary of the most treacherous summit climb in the world, we summarize our report with the following points.

- 1) Clearly defined goals, and responsibilities at the very beginning of the journey and throughout the expedition. Communicating honestly at every step.
  - 2) A strong and effective team of 5-10 members, with a combination of experienced climbers, determined filmmakers and photographers, Mountaineers, competent physicians and a visionary leader.
1. Resources are limited and the conditions are hostile, a strong attention to detail and following the right procedures of mountaineering is of utmost importance as a small mistake could lead to fatal consequences.
  2. Crafting a mission statement and aligning personal and team goals towards the mission of our expedition has to be carefully understood and worked on at every step. At no point of time can any individual deviate from the goal of the mission. The individuals have to be selfless and committed towards this.

Our carefully crafted strategy and recommendations are based on our personal experience and mistakes with thorough analysis and judgement.

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Name	Simulation Hours	Hours Worked
Ryan Finlay	2	6
Jinghan Luo	2	4
Tony Teleky	2	3
Malavika Khatav	2	4