

*Instructor's Guide*  
**Lesson #3**  
**Case Study 2: Wehrner von Braun**

- 1) At end of previous class,
  - a) Pass out assignment sheet shown on p. 2 (file “vonbread.doc”).
  - b) Emphasize again the importance of the students’ reading the assigned material prior to the next class (you may mention that there will be a short quiz).
  - c) Also emphasize the importance of the students’ discussing within their group the questions at the bottom of the assignment sheet prior to the next class.
- 2) At beginning of class, give short quiz shown on p. 3 (file “vonbquiz.doc”). This is a 5-minute quiz, graded pass/fail, designed to see if students read assignment and retained the major points.
- 3) During class, conduct a discussion for each of the seven discussion questions given at the end of the assignment sheet. Comments you can use to stimulate discussion, provide focus, and summarize the discussion are given in red in the teacher’s version of the assignment sheet, pp. 4 - 6. Key conclusions for the case are given at the top of p. 4.
- 4) In the last 5 minutes of class, ask students to summarize the course study and the day’s discussions. Again, key conclusions for the case are given at the top of p. 5.

## Case Study Number 2: Wehrner von Braun

### Pre-class preparation:

#### I. Read the following World Wide Web pages. The pages are all very short. You will want to print a copy of each page for the in-class discussion.

##### A. From NASA Marshall Space Flight Center (pages are linked)

1. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/vonBraun.html> "Wernher Von Braun"
2. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/early.html> "Von Braun: Early Life"
3. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/germany.html> "Von Braun: Germany"
4. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/moving.html> "Von Braun: Moving to the U.S."
5. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/SpaceAge.html> "Von Braun: The Beginning of the Space Age"
6. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/spaceage2.html> "Von Braun: The Space Age Continues"
7. <http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/press-release.html> "Outstanding German Scientists Being Brought to the US"

##### B. From the Alabama Academy of Honor

8. Start at <http://www.archives.state.al.us/famous/academy/ahome.html>, then find Von Braun

##### C. Paper by Charles Donefer (pages are linked)

9. <http://www.akula.com/~donefer/paper/index.html> "Wernher von Braun: National hero or Enemy to the World?" title page
10. <http://www.akula.com/~donefer/paper/paper.htm> Paper associated with previous page

##### D. Satire by Tom Lehrer

11. <http://www.thurible.co.uk/tom/3.html> "Wernher Von Braun (lyrics to a song by Tom Lehrer)"

##### E. A Deeper Look

12. [http://stahlbrandt.com/html/history/v1\\_v2\\_technical.html](http://stahlbrandt.com/html/history/v1_v2_technical.html)
13. <http://dept.english.upenn.edu/~afilreis/Holocaust/nasa-nazis.html> "NASA's Nazis"
14. <http://info.greenwood.com>, then go to title search, search for a book titled "The Nazi Rocketeers", and read the review of the book."
15. <http://www.geocities.com/Athens/3564/> "KZ Memorial Mettelbau DORA"
16. <http://www.benthere.com/Travel/Europe/Germany/Germanytxt11.html>
17. <http://www.nizkor.org/hweb/camps/buchenwald/press/reuters-040395.html>

##### F. Today's Perspective

18. <http://www.msnbc.com/news/288995.asp?cp1=1> "Rocket Pioneers Retain their Passion"

#### II. Be prepared to discuss the following questions in class:

1. What do you believe motivated Von Braun to work for the German military (as early as 1934)? Do you think that Von Braun believed in the Nazi cause?
2. What do you believe motivated Von Braun to come to America after the war? Do you think that Von Braun had patriotic feelings for the US?
3. Consider Tom Lehrer's lyrics concerning Von Braun:  
*"Don't say that he's hypocritical  
Say rather that he's apolitical (meaning not caring about politics)  
'Once the rockets are up who cares where they come down?,  
That's not my department,' says Wernher Von Braun"*  
Do you believe this is an accurate assessment of Von Braun's attitudes?
4. Do you think it is ethical for an engineer to develop a product (or technology) and not care how it will be used?
5. What do you believe motivated Von Braun to work for the Nazis and then come to America?
6. Comment on the use of slave labor at Pennemunde. Needless to say, this is an extreme case, but do you believe that an engineer has any responsibility for ensuring safe and humane working conditions for laborers and co-workers?
7. Do you believe that an engineer or scientist's technical contributions should be assessed independently of his or her behavior?
8. Do you believe that history has fairly judged Von Braun?
9. Do you believe that the US government acted ethically concerning Von Braun?

Name \_\_\_\_\_

## Quiz on Wernher von Braun Ethics Case Study

This quiz will be graded pass/fail and is designed to see how well you read the handout material for our final ethics case study. If you need more room, please write on the back side or add another sheet.

- 1) Briefly describe Wernher von Braun's technical activities before and during World War II.
- 2) Briefly describe Wernher von Braun's technical activities after World War II.
- 3) Do you believe that Wernher von Braun acted ethically throughout his technical career? Briefly explain your answer.

## Teacher's Discussion Guide to Case Study Number 2: Wehrner von Braun

Key points in study:

- 1) An engineer's work can have a very significant impact on society.
- 2) It is unethical for an engineer to develop a product (or technology) not caring about how it will be used or about its impact on society. An engineer cannot divorce himself or herself from the societal impact of his or her work.
- 3) It is unethical for an engineer to exploit unfair labor conditions to develop a product or technology.
- 4) Society and history will often credit an engineer for his or her technical accomplishments without holding the engineer responsible for his or her behavior. Such "hero-making" is wrong.
- 5) Governments can behave unethically. This does not excuse unethical behavior on the part of the engineer.
- 6) Ethical mistakes can compound. You can start with a small error in judgement which will later precipitate a larger error in judgement, etc. The way to avoid the "slippery slope" is to make proper ethical judgements in the first place.

**The text printed in italics below is the student's assignment (also found on p. 2). The text printed in bold typeface is for the teacher to use during class to help stimulate discussion.**

*Pre-class preparation:*

*I. Read the following World Wide Web pages. The pages are all very short. You will want to print a copy of each page for the in-class discussion.*

**All the Web pages are attached at the end of this teacher's guide.**

*A. From NASA Marshall Space Flight Center (pages are linked)*

**The following 6 web pages are NASA's biography of Wernher von Braun. They provide a very positive high-level description of his life and his work. The 7th web page is a copy of the press release announcing Von Braun's arrival. Note that it mentions that the German's will be in the US temporarily. Note also Von Braun's comment of being a "Prisoner of Peace".**

1. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/vonBraun.html> "Wernher Von Braun"*
2. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/early.html> "Von Braun: Early Life"*
3. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/germany.html> "Von Braun: Germany"*
4. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/moving.html> "Von Braun: Moving to the U.S."*
5. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/SpaceAge.html> "Von Braun: The Beginning of the Space Age"*
6. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/spaceage2.html> "Von Braun: The Space Age Continues"*
7. *<http://liftoff.msfc.nasa.gov/Academy/History/vonBraun/press-release.html> "Outstanding German Scientists Being Brought to the US"*

*B. From the Alabama Academy of Honor*

**Another very positive Web page honoring von Braun.**

8. *Start at <http://www.archives.state.al.us/famous/academy/ahome.html>, then find Von Braun*

*C. Paper by Charles Donefer (pages are linked)*

**Paper discusses both the positive and negative aspects of von Braun's work. First mention of the use of concentration camp slave labor to build V2s, but no mention that Von Braun was aware of it. First mention of Von Braun's membership in the SS.**

9. *<http://www.akula.com/~donefer/paper/index.html> "Wernher von Braun: National hero or Enemy to the World?" title page*
10. *<http://www.akula.com/~donefer/paper/paper.htm> Paper associated with previous page*

*D. Satire by Tom Lehrer*

**Satire raises question of how Von Braun can be considered a hero given his Nazi past. Satire also raises the issue that an individual's disinterest in the implications of his/her work is no excuse from responsibility for the results.**

11. <http://www.thurible.co.uk/tom/3.html> "Wernher Von Braun (lyrics to a song by Tom Lehrer)"  
E. A Deeper Look

**The following web page discusses the destructive power of the V2**

12. [http://stahlbrandt.com/html/history/v1\\_v2\\_technical.html](http://stahlbrandt.com/html/history/v1_v2_technical.html)

**The following web page discusses the issues involved in bringing the Nazi scientists to work at NASA. The page confirms Von Braun's membership in the SS and his visiting the concentration camp where the V2s were produced. This is the first of the web pages to question the ethics of the US government in employing Von Braun.**

13. <http://dept.english.upenn.edu/~afilreis/Holocaust/nasa-nazis.html> "NASA's Nazis"

**Review of a book showing that Von Braun was well aware of the use of concentration camp labor. Also discusses Von Braun's involvement in the Nazi regime, claiming at the least that he willingly embraced the regime in order to get continued funding for his work.**

14. <http://info.greenwood.com>, then go to title search, search for a book titled "The Nazi Rocketeers", and read the review of the book.

**The first and second pages below provide description of the concentration camp where the V2 was produced. You can still visit the camp. Third page below provides a survivor's description of the camp.**

15. <http://www.geocities.com/Athens/3564/> "KZ Memorial Mittelbau DORA"

16. <http://www.benthere.com/Travel/Europe/Germany/Germanytxt11.html>

17. <http://www.nizkor.org/hweb/camps/buchenwald/press/reuters-040395.html>

- F. *Today's Perspective*

**NBC article describing a recent reunion of the surviving Nazi scientists who subsequently worked for NASA and Von Braun.**

18. <http://www.msnbc.com/news/288995.asp?cp1=1> "Rocket Pioneers Retain their Passion"

## II. Be prepared to discuss the following questions in class:

1. *What do you believe motivated Von Braun to work for the German military (as early as 1934)? Do you think that Von Braun believed in the Nazi cause?*

**Most students will agree that Von Braun did not actively believe in the Nazi cause. Some will say that he was forced to work for the Nazis. Von Braun received government funding long before World War II started (note also that he was very briefly jailed by the SS). Note that Von Braun was a member of the SS. The key question may be "Did Von Braun believe in providing the German military with a missile?" If not, why did he obtain funding for his work from the German Army? Did he just not care where his funding came from or how his work was to be used? Is it acceptable for an engineer not to care (see Question 3)? If he did care and if he believed in the cause, then how could he subsequently work for the US so enthusiastically? Another issue may be how easy it is to get drawn, little by little, into a major ethical issue (the concept of the "slippery slope"). Possibly at first Von Braun wasn't too concerned with the military issues, but what about after the Nazis took over? Mention to students that it's possible for an ethical issue to start small but, as time passes, for it to get larger and larger. The key may be to avoid taking the first marginally unethical step. Was Von Braun trapped in Germany? Many scientists escaped, and others, like Heisenberg, stayed but "coasted", not working as hard as they could to advance science for the Nazi cause.**

2. *What do you believe motivated Von Braun to come to America after the war? Do you think that Von Braun had patriotic feelings for the US?*

**Note that Von Braun had other options, including surrendering to the Russians. He sent his brother out from their hiding place on bicycle to find an American officer to whom he could surrender. Most people believe that Von Braun thought that the work environment and resources in America would be better than in Russia and that his choice was mostly mercenary (not necessarily economically mercenary, but scientifically mercenary).**

3. *Consider Tom Lehrer's lyrics concerning Von Braun:*

*"Don't say that he's hypocritical*

*Say rather that he's apolitical (meaning not caring about politics)*

*'Once the rockets are up who cares where they come down?,'*

*That's not my department,' says Wernher Von Braun"*

*Do you believe this is an accurate assessment of Von Braun's attitudes?*

**This question sets up Question 4, which is one of the key questions of the case study.**

4. *Do you think it is ethical for an engineer to develop a product (or technology) and not care how it will be used?*

**Key points to emphasize: An engineer's work can have significant impact on society, and the engineer is responsible for that impact. It is unethical for an engineer to develop a product (or technology) not caring about how it will be used or about its impact on society. An engineer cannot divorce himself or herself from the societal impact of his or her work. If the students understand this, they will understand that it is unethical for an engineer or scientist to develop a product (or technology) which he or she believes will have an overall negative impact on society.**

5. *What do you believe motivated Von Braun to work for the Nazis and then come to America?*

**Discussion of this question will probably be a reiteration of the issues raised by the first four questions. Possibly the answer is "blind love of rocketry".**

6. *Comment on the use of slave labor at Pennemunde. Needless to say, this is an extreme case, but do you believe that an engineer has any responsibility for ensuring safe and humane working conditions for laborers and co-workers?*

**Evidence is fairly clear that Von Braun knew about the slave labor and was not concerned (he visited the production facilities and was present at meetings when slave labor was discussed). Is this the stuff heroes should be made of? Students will probably not experience such extreme situations, but unsafe working conditions and unfair labor practices are not unheard of.**

7. *Do you believe that an engineer or scientist's technical contributions should be assessed independently of his or her behavior?*

**This is a broad question that may be applied to many professions. Concerning engineers, however, society is often not well informed concerning the technical issues necessary to judge the impact of the engineer's work, and often times the work will be done for governmental agencies or corporations with large public relations organizations which can manipulate public opinion. None of this absolves an individual's responsibilities to act ethically.**

8. *Do you believe that history has fairly judged Von Braun?*

**Be sure to elicit more than a "yes" or "no" answer from the students.**

9. *Do you believe that the US government acted ethically concerning Von Braun?*

**Students may not understand the psychology and environment of the cold war and the space race. The key here is not to praise or condemn the US government's actions, but to point out that political considerations may often compel a government to act unethically. Such actions should not excuse the subsequent actions of the individual.**