

SPACE JAPAN BOOK REVIEW

From a satcom researcher point of view

Reviewer: Takashi Iida, Editorial Advisor



Peter Warren Singer: "Wired For War—The Robotics Revolution and Conflict in the 21st Century", Penguin Press, 2009.

Speaking of robot, the use of industrial robots goes ahead through in Japan and it is considered that the technology of this country advances in the world, since a study of biped walking robot and care robot is conducted enthusiastically. However, it is wondering if a view point of robot study as a weapon might be zero, because there is the constitution for peace in Japan. This book offers the robot information as the weapon which has not been treated in our country and there is much interesting knowledge that we have not known so far. In conjunction with the information above, as mentioned later, it is turned out that there is another insanity side where human being would be ruled by robot, if it progressed more and more. Now let's introduce it right away.

The author of this book is a senior researcher of the Brookings Institution and acts as a person in charge of defense initiative in the 21st century, and an advisor of the Department of Defense, the Central Intelligence Agency (CIA), and the U.S. Congress. Since this book (translation version into Japanese) is a slightly enormous one that is consisted of text 633 pages, references 51 pages and translator's afterword 16 pages, this book needs to be ready for reading rather willingly than easy reading.

At first it is impressive that robots are advanced to be committed to the Iraqi War very much. Bombs called as IED (Improvised Explosive Device) increase in Iraq. Playing an active part for the IED removal is a robot with arms put on a platform moved by small caterpillars named as PackBot of the iRobot company which is familiar as a cleaning robot company.

In addition, the U.S. forces introduces several thousands of UAVs (Unmanned Air Vehicles). Among UAVs, large-scaled UAVs such as Predator or Global Hawk have a long flight duration of 24 to 36 hours and can distinguish an enemy by always watching situation of the enemy. However, the UAV has come to gradually incorporate attack ability because it can not bear only watching the scene that a friend soldier is killed, if it is used for only reconnaissance. Moreover, although its real application seems to be a future thing, the UAV has ability of aerodynamic performance such as immediate turning because it can bear acceleration to be not able to bear if it is a manned pilot. Operation of UAV is executed via a satellite from a base in the U.S. mainland. As for such UAV operation, a broad bandwidth is needed to conduct image transmission. Thus the satellite communications engineer will be interested in this operation.

The UAV "Predator" was produced by a venture company at first. The episode is described that Marilyn Monroe before her debut committed as a factory worker in a factory of UAV during the World War II. Needless to say, UAV is used for the border guard and anti-disaster measures as well as a battle. As for the UAV operation, a large amount of expenses needed for high knowledge and experience for fighter operation become needless because training finishes shortly in the case of a youth good at a PC game.

In a more interesting thing, a problem of Network Centric Military is discussed. The concept of Network Centric Military was announced by Admiral Cebrowski in the U.S. Naval Space Japan Review No. 72 February/March 2011

War College Review in 1998. It is expected to wipe out "Fog of War" (This means originally that war situation is hard to come to be understood due to filled smoke of musket gun. At present, it means every confusion, mistake and misunderstanding due to difficulty to take the military campaign cooperated under fear, fatigue and uneasiness aimed at life in war by an enemy.) by practical use of IT by making the circulation of information improve. However, in its actual operation, a soldier in the battlefield is confused because an official of higher levels gives him an order directly, besides, plural high officials give him different orders. In addition, even the micromanagement became perform. Information increased, but most are thrown away without being taken time for decision. Here, shortening of this time is planned by using Artificial Intelligence (AI).

In military affairs, new technologies lead to the military revolution called as RMA (Revolution in Military Affairs). It changes a form and character of war. The RMA is how to take new technology in military affairs, but current robot technology resembles with the situation that a plane and a tank came out at the time of the World War I, and it is the state that is not still decided how to use new the technology.

About the research and development (R&D) of robot, SF (Science Fiction) seems to become bread of technology R&D, and "Astro Boy" plays it in the case of Japan, but much SF such as "the Star Wars" seems to contribute to a trigger of an idea.

An energy source of a robot is a battery, a fuel cell, but, for example, as insanity approaching, a robot eating anything live, for example meat, seems to be thought. A small size fuel cell is studied that is buried in the human body and generates electricity by reacting the glucose and oxygen of blood. The electricity to be provided from blood of a human body alone by such a system is about 100 watt at the maximum. Human being is afraid to be ruled by robots, if AI develops and the independence of a robot rises.

In this conjunction, high technology is surely necessary for a robot. But there might be a dangerous situation that robot war potential scatters into poor countries from characteristics of digital circuits. This is because high-tech robot can be assembled by cheap digital components which are sold in the hardware center although it may be the extreme case.

This book includes much information such as movies. Some useful sayings are also included. Next words by Albert Einstein is quoted: "What you do can not be called as a reserch If you know what you yourself are doing." This word must particularly be kept mind in the study management.

There is a book review in a newspaper about this book [1]. Since robot weapon was broadcasted on NHK-TV [2] and the UAV on the TV-Tokyo [3], some people may watch them.

References

- [1] Kazuo Takahashi: "This Book: Wired For War by P. W. Singer, Focusing on Situation of Rapid Robotization", Nikkei Shimbun, September 5, 2010 (in Japanese).
- [2] "NHK-Special: Weapon for Poors—Robot Weapon", NHK-TV, October 17, 2010 (in Japanese).
- [3] "185th Yoshiki Hidaka's Washington Report—Changing of U.S. Strategy of Far East Asia—Interview with Douglas Feith, Former Under Secretary of Defense for Policy", TV-Tokyo, Feb.20, 2011.