

## BALLISTIC MISSILE PROLIFERATION

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### INTRODUCTION

At a time when the superpower arms race has turned a new corner and the prospects of reversal seem real, the international community has awakened to the growing dangers associated with a long unabated arms competition: the proliferation of ballistic missiles.

Although ballistic missiles have been transferred to Third World countries since the early 1960s, widespread concern over their presence throughout the world is quite recent and is the result of a number of developments.

In the eight year war between Iran and Iraq, an estimated 1,000 ballistic missiles were fired, the largest number since World War II. In 1988, Saudi Arabia acquired Chinese ballistic missiles with a range of more than 2,500 kilometres. This confirmed a willingness on the part of some suppliers to transfer ever more sophisticated weapon systems, regardless of the potential implications for strategic stability in the regions affected. By the end of the 1980s, the scope of missile acquisition and production efforts throughout the world became better known. While some 25 Third World countries have been identified as pursuing an advanced missile capability, many are also entangled in political and military tensions with other states. In addition, some are seeking a nuclear weapons capability, and several possess a chemical warfare capability. This has raised the concern that some states may view ballistic missiles as an effective means of delivering weapons of mass destruction, including nuclear, chemical and biological weapons, and that ballistic missiles may in fact be used in this fashion.

The only multilateral step to control the proliferation of ballistic missiles came about in

1987 when seven leading industrial nations adopted a common set of guidelines on exports of missile equipment and technology. Many observers contend, however, that this belated attempt to curb missile proliferation may be too little, too late.

### BALLISTIC MISSILES

Although the term is used frequently in arms control and defence literature, there is no universally accepted, precise definition of "ballistic missile". However, the common elements found in the many definitions are; it is an unmanned, self-propelled vehicle which descends to its target in a ballistic trajectory: that is, a trajectory in which the missile's fall to earth is affected only by gravitational and atmospheric forces. Ballistic missiles are powered by rocket engines and those which are long-range pass through outer space. Many ballistic missiles are guided, and most have a range exceeding 40 km. These missiles can carry a payload of conventional high explosives, chemical or biological agents, or nuclear explosives.

There are at least ten types of ballistic missiles in service today, and more than twice this number (whether missiles of new generations, modified systems or missiles of a different type) are being actively researched by some 15 countries. The technical characteristics of these systems vary greatly. The distance missiles can travel ranges from as low as 40 km (below that range they are usually classified as artillery rockets), to more than 2,000 km.<sup>1</sup> The same wide difference exists when comparing missile accuracy. Missile accuracy is measured by 'circular error probable' or CEP.<sup>2</sup> The missiles being acquired in the Third World vary from a

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