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**CST REPORT ON SPACE INDUSTRY
DEVELOPMENTS EXHIBITED AT THE
MOSCOW AEROSPACE SHOW 2015
(MAKS-2015)**

**A REPORT IN CONFIDENCE TO
CST MEMBERS, ASSOCIATES
AND CUSTOMERS**

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CONTENTS

	Page
Introduction	3
1. KHRUNICHEV	5
2. TsSKB-Progress	7
3. ‘Energiya’ Rocket-Space Corporation (RSC)	9
4. NPO Mash (Research and Production Association of Machine-building)	10
5. Makeev State Rocket Centre (SRC)	11
6. Eurockot	11
7. Chinese Space Industry	11
8. ‘Leninets’ Holding Company	12
9. Central Aero-Hydrodynamic Institute (TsAGI), Central Institute of Aviation Motor-building (TsIAM) and Flight Research Institute (LII)	12
10. ‘Composit’ NPO	16
11. United Engine Corporation (ODK) and ‘Dvigately NK’ company	18
Conclusions	18
References	19

INTRODUCTION

The most recent Moscow Aerospace Show (known by its Russian acronym, MAKS), was held from August 25-30, 2015, in Zhukovski near Moscow, at the airfield of the Flight Research Institute (named after M. Gromov). The MAKS air shows started being held bi-annually from 1993. Currently, it is considered that this Air show is rated third amongst world air shows, after Le Bourget and Farnborough.

In accordance with international agreements, the MAKS air shows are held in the same (odd) years as for the Paris air shows in Le Bourget, but later by about two months. This timing was somewhat unhelpful for MAKS: since the majority of the world's large aviation and space companies and organisations, prefer to show their achievements at the earlier air shows in Le Bourget (which also enjoys being rated as in first position for air shows globally), and do not see a necessity to repeat these demonstrations a few months later. It was noted in numerous CST reports on the past MAKS air shows (e.g., /1/), that these events had rapidly become good forums for mainly showing exhibits that reflected the achievements (both past and current) of Russian and Ukrainian enterprises. (As it was also noted, a number of these enterprises did not have sufficient funds for participating in air shows abroad).

In this regard, MAKS-2015 featured even less West European and U.S. participants, due to current protest policies against Russian actions towards the Ukraine, and with a complete absence of Ukrainian enterprises and companies, for the same reason.

Nevertheless, exhibiting by the remaining, mostly Russian participants, drew the interest of foreign potential customers and their representatives, who readily visited the MAKS Air show, even if their companies did not have their own displays there. In this way, the tradition, formed by the mid-2000s, when the MAKS air shows became the main advertising marketing fora of the Russian aerospace industry, for offering its products, and services to foreign potential customers, has continued in the MAKS-2015 at a similar scale.

At the same time, MAKS-2015, held in the current complicated political conditions, somewhat disturbed the trend to become a 'working place' for the formal arrangement of serious deals, mostly, with foreign customers, whilst initiation of these deals had often taken place during the preceding Le Bourget air shows. (This trend was noted in /1/.)

The Air show was visited on August 26-28, 2015, by a team of CST employees, for the purpose of finding out the latest information regarding areas and directions of space activity that would be of interest to the company. The information gathered, is included in this report only for cases where it contains new details and other news, compared with information obtained from the same companies following visiting the Paris Airshow-2015 in Le Bourget, by a representative of CST (this information was presented in /2/.)

Before this visit, the following items of interest were chosen for planning visits to displays and stands of corresponding companies, enterprises and institutions. They were:

- Khrunichev Space Centre – the ‘Angara’ launch vehicle family, prospects of operation of its launchers in the near term from both the Plesetsk and Vostochny spaceports;
- TsSKB-Progress – prospects for realising the proposed ‘Soyuz-5’ launch vehicle family;
- ‘Energia’ RSC –status of the PTK NP manned spacecraft development;
- NPO Mash– plans for commercial operations of the ‘Strela’ launch vehicle;
- Makeev State Rocket Centre – prospects for continuation of operations for the ‘Shtil’ launch vehicle;
- Eurockot JV – plans and prospects for further ‘Rockot’ operations;
- Chinese space industry – current plans for putting the new FT-1 small launch vehicle family into commercial operations;
- ‘Leninets’ Holding Company – the current situation regarding continuation of the ‘Ajax’ project development;
- Central Aero- Hydrodynamic Institute (TsAGI), Central Institute of Aviation Motor-building (TsIAM) and Flight Research Institute (LII) – the situation regarding continuation of research work on advanced hypersonic aerospace vehicles;
- NPO ‘Kompozit’ company – the assessment of the work done on advanced composite materials for the Russian aerospace industry.

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