

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and  
Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

---

## Technical Workers in an Advanced Society

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

---

Cet ouvrage est publié dans le cadre de l'accord de co-édition passé en 1977 entre la Fondation de la Maison des sciences de l'homme et le Press Syndicate of the University of Cambridge. Toutes les langues européennes sont admises pour les titres couverts par cet accord, et les ouvrages collectifs peuvent paraître en plusieurs langues.

Les ouvrages paraissent soit isolément, soit dans l'une des séries que la Maison des sciences de l'homme et Cambridge University Press ont convenu de publier ensemble. La distribution dans le monde entier des titres ainsi publiés conjointement par les deux établissements est assurée par Cambridge University Press.

This book is published as part of the joint publishing agreement established in 1977 between the Fondation de la Maison des sciences de l'homme and the Press Syndicate of the University of Cambridge. Titles published under this arrangement may appear in any European language or, in the case of volumes of collected essays, in several languages.

New books will appear either as individual titles or in one of the series which the Maison des sciences de l'homme and the Cambridge University Press have jointly agreed to publish. All books published jointly by the Maison des sciences de l'homme and the Cambridge University Press will be distributed by the Press throughout the world.

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

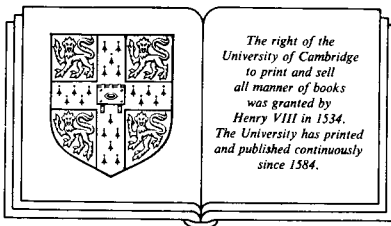
# Technical Workers in an Advanced Society

---

The Work, Careers and Politics  
of French Engineers

Stephen Crawford

*Department of Sociology and Anthropology  
Bowdoin College, Brunswick, Maine*



CAMBRIDGE UNIVERSITY PRESS

Cambridge

New York New Rochelle Melbourne Sydney

EDITIONS DE

LA MAISON DES SCIENCES DE L'HOMME

Paris

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town, Singapore,  
São Paulo, Delhi, Dubai, Tokyo

Cambridge University Press

The Edinburgh Building, Cambridge CB2 8RU, UK

With Editions de la Maison des Sciences de l'Homme

54 Boulevard Raspail, 75270 Paris Cedex 06, France

Published in the United States of America by Cambridge University Press, New York

[www.cambridge.org](http://www.cambridge.org)

Information on this title: [www.cambridge.org/9780521125048](http://www.cambridge.org/9780521125048)

© Maison des Sciences de l'Homme and Cambridge University Press 1989

This publication is in copyright. Subject to statutory exception  
and to the provisions of relevant collective licensing agreements,  
no reproduction of any part may take place without the written  
permission of the copyright holder.

First published 1989

This digitally printed version 2009

*A catalogue record for this publication is available from the British Library*

*Library of Congress Cataloguing in Publication data*

Crawford Stephen.

Technical workers in an advanced society: the work, careers, and  
politics of French engineers / Stephen Crawford.

p. cm.

Bibliography.

Includes index.

ISBN 0-521-35102-2

1. Technicians in industry – France. 2. Engineers – France.

I. Title.

TA158.C73 1989

305'.96'0944–dc19 88-37595 CIP

ISBN 978-0-521-35102-7 Hardback

ISBN 978-0-521-12504-8 Paperback

Cambridge University Press has no responsibility for the persistence or  
accuracy of URLs for external or third-party internet websites referred to in  
this publication, and does not guarantee that any content on such websites is,  
or will remain, accurate or appropriate.

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

## Contents

	<i>Preface</i>	<i>page</i> vii
<b>1</b>	<b>Technical workers in the advanced societies</b>	<b>1</b>
	Theories	3
	Empirical studies	12
	Research issues: Labor markets and nations	15
<b>2</b>	<b>The companies: PAMPCO and TELECO</b>	<b>19</b>
	The focus on French engineers	19
	The choice of metal-working and electronics	20
	The traditional firm: PAMPCO	22
	The science-based firm: TELECO	24
	The samples, data collection and data analysis	27
<b>3</b>	<b>Pierre in his own words</b>	<b>33</b>
<b>4</b>	<b>The social meaning of technical knowledge</b>	<b>51</b>
	Technical education in France	52
	The knowledge that PAMPTO and TELECO engineers use	59
	<i>Ingénieurs autodidactes</i>	64
	Conclusions	65
<b>5</b>	<b>The organization and experience of technical work</b>	<b>70</b>
	French engineers, yesterday and today	71
	Engineering at PAMPCO: Organization and activity	74
	Engineering at TELECO: Organization and activity	80
	The meaning of specialization	88
	<i>Techniciens</i> and <i>petite école ingénieurs</i>	91
	Conclusions	97
		v

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

vi	Contents	
<b>6</b>	<b>Autonomy and authority on the job</b>	100
	The experience and bases of autonomy	100
	The operation and perception of bureaucratic authority	106
	Participation and workers' self-management	113
	The uses of authority	121
	Attitudes towards profit	128
	Conclusions	131
<b>7</b>	<b>Labor markets and career experiences</b>	134
	Recent developments in French engineering careers	135
	The structure of positions	138
	Credentials and seniority	139
	Lateral mobility, the division of labor, and job security	145
	Salaries	147
	Recruitment and socialization	152
	Labor market attitudes at PAMPCO and TELECO	157
	Conclusions	170
<b>8</b>	<b>Trade unions and professional associations</b>	172
	Engineering organizations in France	173
	The engineers at PAMPCO and TELECO	184
	Conclusions	193
<b>9</b>	<b>Social participation, politics, and class</b>	196
	Work, family, and community	197
	Political participation	210
	Party preference and voting	213
	Political ideology	218
	Social class	220
<b>10</b>	<b>Conclusions: technology, nations, and career structures</b>	228
	Technology and the division of labor	228
	Labor and product markets	232
	The formation of a French structure of technical careers	235
	Post-industrial society: Convergence or divergence	238
	<i>Appendix: the interview schedule</i>	241
	<i>Notes</i>	246
	<i>List of references</i>	257
	<i>Index of names</i>	270
	<i>Subject index</i>	273

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

---

## Preface

So many individuals have contributed to this study that it is possible to acknowledge here only those whose assistance has proved especially valuable.

My greatest intellectual debts are to my dissertation advisor at Columbia University, Allan Silver, and to my research colleagues there, Peter Whalley and Robert Zussman. Professor Silver provided the initial direction for this project and crucial guidance throughout it. It was a grant to him from the International Division of the Ford Foundation (# 74-0594), that financed the field research in France. Later stages of the research were facilitated by a Fulbright Research Award and a “Summer stipend” from the National Endowment for the Humanities.

At every stage of the research and writing I depended on the kindness of scholars, administrators, secretaries, and others for the help needed in carrying out such a project. In France, the Maison des Sciences de l’Homme (MSH) and Groupe d’étude des méthodes de l’analyse sociologique (CNRS) provided outstanding facilities, as well as administrative assistance and an intellectually stimulating climate. For that I thank Clemens Heller (MSH), François Bourricaud, Raymond Boudon, Terry Shinn, Bernard Lecuyer, Jacqueline Lecuyer, and Pirette Andrés-Puyo. Two other French research groups shared material as well as intellectual resources at later stages of the project, for which I thank Claude Durand, Georges Benguigui and especially Dominique Monjardet at the Groupe de Sociologie du Travail (CNRS), and Marc Maurice, Jean-Jacques Sylvestre, and Arndt Sorge at the Laboratoire d’Economie et de Sociologie du Travail (CNRS). Other French scholars who gave substantial and much appreciated assistance along the way include Jean-Paul Bachy, Luc Boltanski, Mohamed Cherkaoui, François Dupuy, Patrick Fridenson, Guy-Marc Groux, Gérard Grunberg, Henri Lasserre, Dominique Martin, Renaud Sainsaulieu,

Cambridge University Press

978-0-521-12504-8 - Technical Workers in an Advanced Society: The Work, Careers and Politics of French Engineers

Stephen Crawford

Frontmatter

[More information](#)

## viii Preface

Dominique Thierry, and especially André Grelon. Several North American and British scholars provided assistance with the research or with comments on the manuscript, for which thanks go to Robert Blackburn, Val Burris, Loring Danforth, C. R. Day, Duncan Gallie, Ken Prandy, George Ross, Dean Savage, William Schonfeld, Carmen Sirianni, Sandy Stewart, Ezra Suleiman, and Sharon Zhukin. David Burtis was enormously helpful with the designing of the complex programs that produced the time-budget classifications. For the crucial computing facilities and advice provided by the Department of Sociology at the University of Maryland (College Park) I thank Jerold Hage, Reeve Vanneman and the graduate students who worked in the Department's "Data Lab."

It is obvious that this research could not have been done without the cooperation of the two companies involved. Much less obvious are the many ways that local directors, personnel managers, and secretaries went out of their way to accommodate requests for lists, records, documents, interviewing rooms, and tape recorder repairs. I am especially grateful to the engineers who took the time to be interviewed, and to the large number of them who did much more to make my stay pleasant and informative.

The following professional societies, labor unions, trade associations, research teams, government offices, and other organizations also provided timely help at one point or another: FASFID, SFIC, CNIF, CNPF, UIMM, USS (CFDT), UGICT (CGT), UCT, EDF, LEST (CRNS), GST (CNRS), CSO (CNRS), CSO-MACI, ADSSA, CSI (Ecole des Mines), CSE, CEVPFC (FNSP), Entreprise et Personnel, INSEE, Chemical Bank, Centre Culturel Franco-Américain, and the Centre Universitaire Internationale. It is impossible to name the dozens of individuals who went out of their way to make my private life in France more interesting and comfortable, but I want to thank in particular Dominique Monjardet and Antoinette Chauvenet, Pat and Marie-Annick Doherty, and the Gréchant family.

Several research assistants and secretaries have labored on this project. In France, Norma Fuller and Mariane Rupt conducted several interviews each. In the United States, David Buck, Henry Lyons, Susan Lyons, Johnna Major, Janet Morford, and Nicole Polayes assisted with the computing and transcribing. Special thanks go to Ms Morford and Ms Major for their exceptional work as assistants. The secretaries and supervisors in the College typing pool and mail room did far more than required. I am especially grateful to Claire Schmoll for typing the manuscript.

Finally, I want to thank my wife, Liliane Flöge. Now an Associate Professor at Bowdoin College, she conducted forty of the interviews in France, provided enormous assistance with the final stages of manuscript preparation, and was remarkably supportive throughout the many years of research and writing.